

PLAINTIFF'S EXHIBIT

GP-890

SEMIANNUAL REPORT TO THE MEMBERSHIP

September 8, 1972

SGP 0011621

REPORT OF THE
TECHNICAL COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

The eighty-ninth meeting of the Technical Committee was held on August 2, 3 and 4, 1972 in Niagara Falls, New York. The meeting was attended by eleven representatives from six companies and five Association staff members.

Mr. Irwin Benjamin, Chief, Building Fire and Safety Section of the National Bureau of Standards, was a guest at luncheon on August 2. He described, in generalities, present and projected fire research at NBS. The consensus of the committee was that the talk was quite disturbing in that most of the programs appear to be geared to fire and smoke detection and extinguishment with very little emphasis on containment. These programs will seriously affect the gypsum industry if containment gives way to detection and extinguishment in building codes. In essence, a structure could be built of match sticks and straw if sufficient detection means and sprinklers or other extinguishing devices were provided. The only program involving noncombustibility mentioned by Mr. Benjamin was the one on which our industry research associate is engaged (definition of noncombustibility and methods to determine noncombustibility of building materials). Hopefully, some of the programs will be influenced by our research associate to benefit, rather than downgrade, the use of gypsum.

A progress report was given by Mr. J. L. Houser, gypsum industry research associate at the National Bureau of Standards, on his first two months in this position. Most of his time has been spent familiarizing himself with NBS procedures and personnel and developing rapport with the people involved in the fire safety programs. This is extremely important if he is to influence these programs. The committee pointed out that a close relationship between Mr. Houser and his advisory task group is essential on technical matters. His first project just underway is to evaluate the heat release by calorimeter of a large sampling of a variety of building materials.

GYPSUM LATH AND PLASTER

It was reported to the committee that ASTM Committee C-11 on Gypsum is being reorganized with a new scope, by-laws and sub-committee structure to enable it to handle application specifications. This reorganization is the result of our decision to submit application standards to the American Society for Testing and Materials (ASTM) rather than continue work with the American National Standards Institute (ANSI).

Revision of the Manual of Gypsum Lathing and Plastering has been completed and submitted to the staff for final correction and review. This manual cannot be published until new photographs are obtained to be sure no violations of OSHA safety requirements are shown.

It has been determined that the National Fire Protection Association (NFPA) will not revise the National Electrical Code to allow less than 1/2" of plaster over electric heating cable without a recognized national standard for such application. Therefore, an ASTM "use" specification is being developed. In the meantime, individual manufacturers will need to obtain separate approvals as exceptions to the code.

Draft of a new veneer plaster manual was reviewed and returned to task group for revision.

An attempt is being made by some members of the plastering industry to organize a new ASTM committee to promulgate all specifications pertaining to interior and exterior lathing and plastering. This would include both product and system specifications. An organizational meeting was held at ASTM headquarters on July 17. The formation of this committee was sanctioned by the ASTM Board of Directors. The Technical Committee is strongly opposed to this new committee. It is our belief that ASTM Committee C-11 is completely

capable of developing any specifications needed for gypsum materials and systems. A letter has been written to ASTM headquarters in opposition to the inclusion of gypsum in its scope. Several members of Committee C-11 who are influential with ASTM have been contacted to add their support to our objections. Hopefully, formation of this committee can be modified to eliminate gypsum from its scope and to prevent duplication of work rightfully belonging in ASTM C-11.

GYPSUM WALLBOARD, BACKING BOARD AND SHEATHING

The proposed ASTM standard for the installation of steel framing members to receive screw attached gypsum board (based on ANSI A97.2) passed C-11 letter ballot. Negative votes were resolved, revisions were made and the specification was submitted to main committee letter ballot. It is anticipated that the standard will be approved for publication immediately after the January meeting of C-11. This is the first application specification that has been transferred from ANSI to ASTM by the gypsum industry. Since there have been no major problems encountered with this standard, the remaining ANSI standards will be submitted to ASTM as soon as possible.

The application specification for fire barrier gypsum board has passed C-11 subcommittee letter ballot and has been submitted to main committee letter ballot.

The Technical Committee established the limits for performance characteristics of gypsum wallboard. ASTM Standard C-36 has been revised accordingly and has been submitted to subcommittee letter ballot. This revision will eliminate board weights and replace them with meaningful performance criteria such as (1) nail pull resistance; (2) core, end and edge hardness; and (3) deflection under humid conditions. When this revision is approved, other pertinent board standards (backing board, veneer base, sheathing, etc.) will be similarly revised.

The present test method specified in ASTM for differentiation between regular and type X gypsum board is inadequate with considerable variation in results between laboratories. This is an extremely important method in that the only other way to distinguish between fire rated and non-fire rated board is in a full scale fire test. Modifications of the present method as well as a new method have been proposed. Round robin testing is being conducted and it is anticipated that revisions to the ASTM procedure will be finalized at the next Technical Committee meeting.

Work is progressing in specifications for (1) rehabilitation; (2) gypsum board for exterior use as a substrate for texture type finishes; (3) predecorated gypsum board; and (4) shaft walls. Drafts of these proposed specifications will be submitted to the Technical Committee by the respective task groups prior to the next meeting.

At the request of the Board of Directors, a task group, consisting of members of the Technical and Building Code Committees, was assigned to review requirements and suggest revisions to National Fire Protection Association 90A to allow the use of gypsum board in air conditioning and ventilating ducts. Revisions have been proposed to NFPA but no action has been taken as of this writing. Even though NFPA may approve the requested revisions to the code, the consensus of the Technical Committee is that a test (ASTM C-411) for surface temperature resistance will be required for approval of gypsum board products to comply with the code revisions. Facilities for running this test have been located and it can be conducted for an estimated cost of \$750 which needs to be approved by the Board of Directors. Small scale tests run in one of the company laboratories indicate that gypsum board would pass this test.

It was reported that ANSI Committee A-17 on Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks, is involved in shaft wall considerations. Request will be made to A-17 for membership of one of the Technical Committee members to report on and contribute to the work of A-17.

SOUND

Since sound testing of assemblies to bring the Design Data - Fire Resistance manual up-to-date cannot be completed in time to be included in the current revision of the manual, final decision on specific assemblies to be tested under this program was delayed until the next meeting.

FIRE TESTS

The ASTM standard for fire barrier gypsum board has been approved by the Society and given the designation C-707-72T and will appear in the next issue of ASTM Standards.

The written portion of the Design Data - Fire Resistance manual was reviewed and finalized. In reviewing the assemblies, it became evident that details from some of the reports were needed. Therefore, the staff will revise the manual as discussed at the meeting and submit a copy to each committee member for review and comment in ample time to meet the printing deadline.

The double wall Design 5-1 Hr. fire test to obtain a 2 hour rating with separately loaded wall sections was conducted at the National Gypsum Company Laboratory on August 1 and was witnessed by the Technical and Building Code Committees. The assembly failed under load in 1 hour 54 minutes. The type X wallboard from four member companies performed as well as any board the committee has seen tested. Therefore, it appears there is no way to pass this test with Design 5-1 Hr. walls and the new lumber size (1-1/2" x 3-1/2" studs) and this program will be dropped.

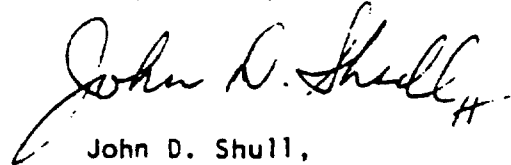
There is still concern regarding some of the present fire ratings with the new lumber sizes. It is understood that a UL decision has not yet been reached regarding the current ratings with smaller dimension lumber. It was agreed that this is a lumber industry problem and should be handled by them, but our industry should certainly keep advised since several of our floor-ceiling ratings could be in jeopardy.

The California State Fire Marshal Corridor Tests were conducted in July. The gypsum product performance was excellent, as expected. A further report will be given at the semiannual meeting.

The current ASTM Standard for Gypsum Wallboard (C-36) specifies a maximum flame spread of 15. It has been found that gypsum wallboard does not always meet this requirement for any of a number of reasons (results range from 10 to 20 in most cases). Since all member companies certify compliance with C-36, the Technical Committee recommended that the flame spread be changed to 25 maximum in the next revision of C-36.

A gypsum wallboard racking test conducted at the Illinois Institute of Technology last March 31 showed that performance of 1700 lbs/MSF 1/2" board was essentially equal in racking strength to the heavier weight board tested in 1956. Therefore, results of the 1956 series of tests appears valid for today's board weights and further testing is not contemplated at this time.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "John D. Shull", with a stylized flourish at the end.

John D. Shull,
Chairman

REPORT OF THE
BUILDING CODE COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

The summer meeting of the Building Code Committee was held August 1 in Niagara Falls, New York. In recent years, we have seen an increase in the active participation by building code representatives of the member companies representing a large percentage of the industry production with distribution in all markets of the country.

To those who have followed the activities of the Building Code Committee with the agenda, minutes and report to the membership, it should be obvious that this committee's work continues to increase and building code fees grow as a cost factor to the individual companies and to the Association. Many years ago, lower population, less competition from new materials and assemblies, and with building codes largely confined to major metropolitan areas, the work of this committee seemed unnecessary and actually was discontinued for several years.

Today, with the great increase in population, the mushrooming suburbs, the increase in new materials with more combustible characteristics than gypsum products, building codes have become more sophisticated. Since regulations concerning public safety involving fire resistive requirements have increased and protection from unwanted sound became a requirement, the activity of the committee has become most important.

Not the least of the problems is the increase in the amount of fees charged for code approval, the increased number of communities having such charges and the growing trend to charge for periodic review.

In this regard, it had been proposed that the membership might be interested in a statistical analysis of the cost to the member companies of building code activity. It seems obvious to some of us closely concerned with this type work that the only way to control such expense is to increase the Association activity in representing the member companies in gaining industry approvals and reduce or eliminate the manufacturer's code work.

A simple way to develop actual cost figures is through reports by all members to a confidential agent. This requires your approval implemented by a direct charge to your company staff to carry out the assignment, requesting the report at a specific time.

The committee generally considers code problems in its meetings under four categories and this report will follow that plan.

For widest impact, the most important activity through which the Building Code Committee and the Association staff working on building codes can effectively help is through the four model building code groups. The International Conference of Building Officials with its Uniform Building Code probably affects the largest number

of communities in the country. Generally, gypsum interests have been successfully protected and promoted through the UBC but there are areas still needing attention. The major item at the moment is obtaining official acceptance of the Fire Resistance Design Data manual. To this avail, the Building Code Committee is holding a special meeting in Kansas City in mid-September during the annual business meeting of ICBO. It is hoped that by showing a strong backing of the Association through the committee's direct involvement, the Fire Resistance manual will be officially adopted and included in the 1973 edition of the Uniform Building Code.

Gypsum products have generally been favorably covered as a group in the Southern Building Code. We continue to support this group by sponsoring one issue of the Southern Building magazine, having various member company representatives prepare articles to be included in the issue devoted to gypsum. Your assistance in this matter is solicited in approving advertising by your company in the April "Gypsum Issue." This magazine not only is the official publication going to the building officials in the area generally east of the Mississippi and south of the Mason-Dixon line, but also is the official magazine of the American Institute of Architects in the southeastern part of the country. In addition, the Association distributes reprints of our issue to both the ICBO and BOCA memberships.

The Building Officials and Code Administrators, International, with their BOCA Code appear to be moving in a direction to

give other than building officials the right to vote on code changes during their code hearing meetings. Generally, all of the model building code groups have restricted building material manufacturers and other non-building official membership from voting on code changes. Such members are permitted to submit proposed changes and also to speak on changes and other matters but never to vote.

The fourth model code, the National Building Code, is sponsored by stock fire insurance companies and continues to receive our attention. However, this code is written by engineers in the employ of the American Insurance Association and it is more difficult to sway them than is the case with the other three model code groups, where all changes are considered in a general meeting with open discussion before being voted on.

There is continual agitation for a single national building code from several directions. The model code organizations have grouped together and already have developed a One- and Two-Family Dwelling Code which is being widely promoted and generally accepted by such groups as the National Association of Home Builders. The group which developed this standard is holding further meetings and considering developing a national model code for multiple dwellings, institutions and commercial buildings. They meet during each of the model code groups' annual meeting as well as at other times. This is an important reason for the Association staff to attend model code groups' meetings and promote good will towards our industry.

The Building Code Committee has no recommendation for specific projects requiring expenditures of funds. The committee urges your support of the general budget items covering the building code expenses which include Association activities at model code group meetings.

The second area of general concern is state building codes. A group referred to as the National Conference of States on Building Codes and Standards continue in an effort to bring about a uniformity in building codes which would basically be the same in all states.

Some states already have regulations or special laws which affect our products. One of the most important of these has been the State of California where, through the State Fire Marshal's office, industry has been forced to maintain special approvals at considerable expense in the past. It appears that within a year or two this may be solved when the state updates the adoption of the Uniform Building Code which hopefully will include our Fire Resistance manual.

The State of Texas has a law that could ultimately be costly to us. Although not yet mandatory, it could require all tests, including fire, sound and structural, of materials being sold in Texas, be tested in Texas. The law has been passed but thus far has not been implemented by appropriating money or giving more specific directions to some of the schools which would set up and run the test facilities.

North Carolina, again through the State Fire Marshal's Department, continues to present problems by refusing to accept fire tests other than those of Underwriters' Laboratories.

The Federal Government, under a growing number of laws, continues to pose major questions in the building code field. One of the latest is a bill concerning health, food and drugs which has been passed and is now a law. In this bill, concerned with consumer protection, it appears that standards developed by manufacturers or by a group of people including manufacturers may not be acceptable. One interpretation of the wording would infer that even ASTM and ANSI standards would not be acceptable. However, there is a provision which automatically accepts OSHA standards. If gypsum standards were accepted by the Department of Labor under the Occupational Health Act, they would be acceptable under this new law. Therefore, at the recommendation of the Building Code Committee, the staff is investigating how ASTM and other standards could be presented and accepted under OSHA.

In the next general category, "City Building Codes," major cities generally do not follow a model code and continue to restrict the fullest use of gypsum products. These include New York, Chicago, Los Angeles and San Francisco.

When the new building code was adopted in New York City, gypsum wallboard assemblies were penalized to the extent that it was necessary to have specific approval by the city's Board of

Standards and Appeals for fire resistive and other characteristics. There is some indication this may finally change and efforts are being made to have our Fire Resistance manual adopted by the New York Building Department under the Building Code, as distinguished from the Board of Standards and Appeals approval.

The City of Chicago is one of the leaders in the problem concerning the full use of gypsum wallboard in high rise buildings by objecting to its use in vertical air duct systems. The Chicago Building Department was also one of the leaders and is very active in studying the problem of fire in high rise office buildings, which has led to a great deal of discussion of "trade offs" under which the building department may reduce fire resistive requirements by an hour to compensate the building owner who will be required by the building regulations to put in a sprinkler system. These matters are far from settled and the staff and various members of the Building Code Committee continue to watch them very carefully. The general theme of our arguments is that fire resistance built into the building stays there and is active during the fire while problems may develop in a sprinkler system that reduce or eliminate its value when needed. Further, gypsum has been used successfully for fire resistance for years.

The City of Los Angeles has adopted a sound ordinance and is requiring current up-to-date tests. Although our Fire Resistance manual is not a part of their building code, the city ordinance references our manual as a source for acceptable sound

test information. Every salesman in this jurisdiction should be familiar with our manual. This is presenting difficulties due to the lack of sound test data, primarily with lath and plaster assemblies and even in some wallboard installations. Furthermore, there are specific requirements on fire tests for shaft wall assemblies that have given all gypsum manufacturers problems in gaining full approval by Los Angeles.

The City of San Francisco is perhaps the most difficult building department in the country to get approval of 2-hour or longer fire resistive assemblies. They refuse to accept fire test data with an interpretation extending the height beyond the test panel height. What this amounts to is a height limitation of 10' since that is the maximum height that can be fire tested. Elsewhere, 14' and 16' high partitions are normally acceptable. Furthermore, San Francisco has enforced a "fall off" criteria which is over and above the standard requirements of the ASTM E 119 Fire Test. This means an assembly can pass the requirements of E 119 for a 1-, 2-, or 3-hour rating and yet not be approved in the City of San Francisco since part of the side exposed to the fire fell off the assembly to a greater amount than they deem safe.

The final category of concern to the committee is "materials." One of the two main problems in obtaining wider acceptance of the use of the Association Fire Resistance manual is the matter of product identification. It is most desirable to have the products identified with the applicable ASTM standard for the product in-

volved, indicating it is made in conformance with the appropriate ASTM standard. Some manufacturers are marking end bundling tape with the proper designation. Recently, BOCA has included in their regulations the requirement that any products approved must be properly identified as noted above. The other problem giving some difficulty in gaining full acceptance of the Fire Resistance manual is the many types of fire-rated board. The fact that some companies list many formulations for fire-rated board under one assembly shown in Underwriters' 1972 Fire Resistance Index deters the acceptance of the Fire Resistance manual in building departments acquainted with the UL book. The Building Code Committee recommends each member review carefully with their marketing and technical people the need to continue these many designations.

A report was given by Mr. Houser, the NBS Research Associate sponsored by the Gypsum Association. The committee feels his orientation and progress to date has been excellent. For the time being, Mr. Houser has not been able to devote much time to building code matters. We look forward to the time when he can spend more time on codes.

In conclusion, the Building Code Committee is carefully studying the growing number of regulations affecting the use of gypsum products as well as the increasing number of agencies, particularly governmental, that are becoming a factor. As a group, we are con-

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cerned with permissive regulations affecting the use of new and old building materials which can reduce the amount of gypsum products sold per unit.

Respectfully submitted,

C. E. Abbey
C. E. Abbey,
Chairman

SGP 0011640

REPORT OF THE
TRAFFIC COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

The Traffic Committee will hold their fall meeting in the Buffalo, New York area on September 13, 14, 1972, jointly with the Materials Handling Committee.

CONCEALED DAMAGE LIABILITY X-263

On February 24, 1972 the I.C.C. served its long awaited decision in Ex Parte 263 - Rules, Regulations and Practices of Regulated Carriers with respect to the Processing of Loss and Damage Claims. Rules were originally put into effect by the carriers in August 1969, but there were so many complaints by shippers that the Commission instituted an investigation. These complaints were aimed at the rules set by the carriers to limit liability for concealed loss and damage.

Briefly, in its decision the Commission declared that carrier rules restricting their liability for concealed loss or damage are unlawful. Further, the Commission was quite critical of the carriers for refusing to pay claims, failing to handle claims expeditiously, and not cooperating among themselves to avoid claim liability.

The Commission adopted new rules to become effective on April 20 and stated it would seek appropriate legislation to permit them more authority over claims practices.

In April the I.C.C. denied petitions for reconsideration of its February 24 decision, but did postpone from April 20 to July 1 the effective date of the newly prescribed rules.

In June legislation was introduced aimed at strengthening the I.C.C.'s ability to deal with cargo loss and damage. These proposals were introduced in the Senate as S.3717 and S.3718.

S.3717 would authorize the Commission to prescribe rules and regulations requiring railroads, water carriers and express companies to maintain insurance for the protection of shippers against cargo loss or damage on the same basis that the Commission presently requires motor carriers and freight forwarders to so indemnify shippers.

S.3718 would prescribe stronger and more expeditious cargo loss and damage claims adjudicatory procedures for the I.C.C., making all I.C.C. orders arising from such adjudications binding on all parties unless reversed on judicial review.

Both of these proposals were among the legislative recommendations included in the Ex Parte 263 report of February 24, 1972. The two bills have been referred to the Senate Commerce Committee for further action.

In an order issued June 27 upon request by the National Freight Claim Council of the American Trucking Association, Inc., the Commission extended to September 1 the time for complying with the tariff filing requirements by the carriers.

CAR CLEANING CHARGES - DEBRIS REMOVAL

I & S 8363 - Sub 1 - Special Unloading Charge.

This was a proposal by the rail carriers to establish a \$25.00 car cleaning charge for cars returned to railroads by customers containing dunnage, debris, trash, etc. The subject has been under consideration since 1967, and publication of the charge has periodically been voluntarily postponed by the carriers pending the final decision by the Commission. The last postponement was to have been April 1, 1972 but the carriers issued cancellation of the proposed amendment of Section 1, Rule 27, pertaining to the \$25.00 car cleaning charge. The cancellation came before any decision by the Commission. On April 14 the I.C.C. served its order officially discontinuing I & S Docket No. 8363 - Sub 1.

As reported in March, I.C.C. Docket No. 35237, Consignees' Obligation to Unload Rail Cars in Compliance with Carriers' Published Tariffs was issued by the Commission on February 1 and found that Rules 14, 27 and 30 of the Uniform Freight Classification do impose on consignees the obligation to completely unload such material as dunnage, debris, trash, etc., from cars containing inbound shipments.

GFTC-ER 201-186 was an Eastern Railroads proposal to establish a \$300.00 charge per car for movement from consignees' siding or carriers' team track for removal of trash, debris, dunnage, etc. The proposed charge was subsequently reduced to \$50.00. The

proposal was approved but publication was held in abeyance pending final disposition of I & S 8363, Sub 1. The Eastern Railroads have not issued an official disposition of their proposal, but we can assume the matter has been dropped since I & S 8363, Sub 1 has now been closed.

Subject 16 of Docket 316 June 1972, Uniform Classification Committee, is a proposal by the railroads to amend Rule 27, Section 1, of Uniform Freight Classification to outline the consignees' responsibility for unloading cars. The carriers are attempting to provide specific wording, namely, "It shall be the responsibility of consignee when unloading box cars of any type, flat cars of any type, gondola cars, open-top hopper cars or refrigerator cars, to remove from such cars the lading, blocking, bracing, strapping, paper or debris of any kind which is not a part of the car or its equipment, except that a consignee need not unload or remove the following,..."

Objections have been filed by carrier traffic executives. The matter is now being held in abeyance after having originally been approved.

EX PARTE 270 - SUB. 2 - INVESTIGATION OF RAILROAD FREIGHT SERVICE

This subject was reported in the annual report and briefly concerns an I.C.C. investigation of railroad freight service deficiencies and problems. A standardized complaint form permits

shippers to submit complaints to the Commission. This form is designated BOP - 105 - Railroad Freight Service Report. Certain requirements must be met by shippers in filing these complaints and in turn the Commission has issued appropriate rules and regulations incumbent upon the railroads, with corrective measures mandatory upon the carriers. The purpose of the investigation proceeding itself is to determine the extent and causes of railroad freight service deficiencies.

ROLLING STOCK FINANCING AND UTILIZATION ACT OF 1972

This was a Senate bill, originally proposed as S.1729, "Fast Freight Systems Transportation Act," or as it became known, "Fastcor" bill. This bill has undergone numerous changes from its original form. On August 4, 1972 the Senate, by unanimous vote, approved this legislation and sent it on to the House for their action. The primary aim of the bill is to increase the supply of railroad rolling stock and to improve the utilization of this equipment. It provides that if the rail industry fails to solve the freight car supply problem within three years, a Rolling Stock Authority would be created to acquire, maintain and provide rolling stock. This would only be done after three years and after the Secretary of Transportation and the Interstate Commerce Commission agree that the railroads have not made substantial progress toward solving the problem. Congress could then authorize the establishment of the Rolling Stock Authority. Other parts of the Act provide various aids and assistance for

the railroads, such as, loan guarantees to improve facilities in rural areas, a study by the I.C.C. to determine freight rate discrimination against recycled materials, determine use for abandoned trackage and rights of way, and provide various job protection.

SWITCHING OF STRIKE BOUND PLANTS BY RAIL SUPERVISORY CREWS

Proposal by the Eastern Railroads to establish a charge for the use of railroad supervisory personnel in performing train service at a customer's facility on his request, while the customer's employees are on strike and picketing. This proposal was protested by your Traffic Committee. The Chairman appeared at the hearing in New York City in July 1971. The subject was deferred for further consideration. We are now advised the subject is in suspension until further notice.

PROPOSED SURCHARGE FOR IMPOSITION IN STATES WHERE EXCESS CREW LAWS APPLY

Proposals by railroads to establish surcharges on freight traffic moving from, to or within specific states having archaic minimum crew laws. These laws state that railroad operating crews will consist of a specific number of men. This number varies among the states affected. The railroads contend that they can and should be allowed to operate with less than this required number for operating economies. Concerted effort has been put forth by the shipping public to assist the railroads in having these laws repealed or satisfactorily amended. Your joint Traffic and Materials Handling Committees have taken an active part in this effort. Surcharges

have been proposed in New York, Indiana, Ohio, Arkansas and Wisconsin. New York repealed its law in 1971. Indiana passed a law which provides that collective bargaining agreements will take precedence over the old law. The Ohio Governor signed a repeal law in March. In May the Wisconsin Governor signed a bill to repeal their "Excess Crew Law." The only state remaining is Arkansas which requires a crew of six men on trains of over 25 cars. The railroads and shipping public are mounting an organized campaign to have this law repealed this year. The repeal comes before the electorate in the general election on November 7, 1972 in the form of a ballot calling for repeal of the law, while still protecting the jobs and earnings of the employees involved by elimination through attrition.

EX PARTE 270, SUB 1A and 1B - RAIL FREIGHT RATE STRUCTURE

An I.C.C. proceeding to determine:

- (1) Possible self-defeating nature of general rate increase with respect to generating revenues
- (2) Disparities and distortions in the basic rate structure
- (3) Uneven effects of rate increases on individual railroads
- (4) Lack of railroad incentive to improve service in line with shipper requirements.

The Commission originally announced it would conduct a separate proceeding, Ex Parte 270, Sub 1, to investigate certain export-import relationships as they relate to various ports. The

Commission has now divided the proceedings by designating Sub 1A to deal with the Pacific Coast port area and Sub 1B to cover the Great Lakes ports. Some hearings have already been held with further dates set for Sub 1A in San Francisco on September 25, and Sub 1B in Chicago on October 30. These proceedings were opened upon complaints that export-import rates for Great Lakes and Pacific ports had become distorted in relation to corresponding rates to and from other ports.

In conjunction with the Commission's investigation, it has now awarded a contract to an outside firm to conduct economic research studies intended to provide information and guidance for future Commission decisions with respect to general rail rate increases and rail services. It is expected this data will also provide a means on which to base future policy decisions regarding the structure of rates and costs in the rail industry.

EX PARTE 271 - NET INVESTMENT - RAILROAD NET BASE

A proceeding instituted in December 1970 by the I.C.C. to investigate whether net investment as now used or some other rate base is the proper basis for measuring rate of return.

In November 1971 the Commission issued a preliminary report in which it summarized positions of the parties and requested more information in the form of verified statements and staff conferences.

In its summarization, the Commission said that apparently the following issues will be raised: land valuation, capitalization of maintenance accounts, depreciation, use of earnings for investment, debt/equity relationships, investment in non-transportation affiliates, the nature of used and useful properties, and the adoption of alternatives to the fair-return-on-value test. Further, they said the investigation should include a determination of what constitutes a fair rate of return on the investment base. Another major question will be whether to consider the following in establishing a reasonable rate of return: provision in the rate of return for the recovery of income taxes, use of the cost of capital approach considering separately cost of debt capital, cost of preferred equity capital, and cost of common equity capital.

All parties to the proceeding were required to file a broad statement of position by last January 31, stating support of or opposition to the present method and/or the matter of determining a reasonable rate of return. Subsequently, initial verified statements of fact and argument in support of the statements of position are to be filed by October 1, 1972, and filing of verified reply statements are to be filed by December 1, 1972.

It is quite obvious this proceeding will be a long drawn out affair requiring considerable time and effort of all parties involved.

MOTOR CARRIER GENERAL RATE INCREASES - SECOND ROUND - 1972

This topic was discussed quite thoroughly in the Traffic Committee Chairman's spring report to the membership. Reviewing briefly, the motor carriers have been requesting general rate increases about every six months, due to the conditions of the 1970 Teamsters Contract. These increase requests have been scrutinized not only by the shipping public, but now by the Price Commission. The 1972 Second Round increases are now, generally speaking, all effective and following is a synopsis of the Bureaus, effective dates and truckload increase percentages.

Central & Southern Motor Freight Tariff Association -
July 22 - 2%

Central States Motor Freight Bureau -
July 15 - 2%

Eastern Central Motor Carriers Association -
July 14 - 2%

Middle Atlantic Conference -
July 10 - 1%

Midwest Motor Freight Bureau -
July 27 - 2%

New England Motor Rate Bureau -
July 31 - 1%

Pacific Inland Tariff Bureau -
July 5 - 3 to 1 cent cwt. (on weight)

Rocky Mountain Motor Tariff Bureau -
Sept. 2 - 2%

Southern Motor Carrier Rate Conference -
July 17 - 2%

Southwestern Motor Freight Bureau -
July 27 - 2%

These permitted increases are generally lower than the requested amounts, except in cases where the requested figure

was adequately justified and within the Price Commission's acceptable range.

WTL C-25-994, SWL C-25-183, CUW 25-28 - PROPOSAL TO REDUCE RAIL RATES

This proposal, originally submitted in August, 1970, proposing reduced rates generally within Western Territory and to Illinois Territory, pointing out the severe swing of traffic from rail to truck, and suggesting rail carriers take remedial action. The application was the subject of considerable debate and counter proposals until finally agreement was reached on a mutually satisfactory rate level. New scale of 120,000 lb. rates, elimination of 40,000 lb. rates, and adjustments in other rates are now published and became effective on June 27, 1972.

Present territorial scope includes Western Territory and Illinois Territory. Application from Southwestern origins to Western, Illinois and Official; and from Western to Official are under consideration.

GFTC-ER 210-91, TRANSPORTATION OF RUNNERS AND RISERS FROM, TO AND WITHIN OFFICIAL TERRITORY

This was a proposal by the Insulation Board and Wall-board Traffic League to establish a new rule to provide free transportation of runners or risers used in shipments of boards or sheets, exterior siding, lumber, plywood, and wallboard, on flat cars. The rule would specifically provide that runners or risers be "secured" to and be made a part of the bundle or package. Gypsumboard loading procedures provide that the runners or risers are not necessarily secured to and made a part of the package. There is presently a rule published specifically for our product and situation.

A few years ago, this same organization, in GFTC-ER Submittal 210-41, proposed the same rule change and was rejected in its bid, notwithstanding a tremendous protest effort by the Materials Handling and Traffic Committees. In that submittal, the Eastern Railroads rejected the proposal as docketed, but their research group counterproposed that Item 1770 of TL-CTR Tariff E-2009, containing the exception to Rule 30 of UFC on gypsumboard products, be cancelled. Item 1770 authorizes free dunnage on shipments of gypsum wallboard when loaded on bulkhead flat cars. Obviously, cancellation would have increased our transportation costs.

In the present instance, a member company communicated directly with the Eastern Railroads chairman, indicating dissatisfaction with the instant proposal and advising protest would be made if the matter was progressed. A representative of that company attended the public hearing to determine the degree of possible involvement. No public statement was made at that time, but its progress was carefully observed. Subsequently, the GFTC-ER Committee voted not to recommend the subject. The proponent requested review by the Traffic Executives Association and they also rejected the proposal. The subject file was closed and proceeding terminated.

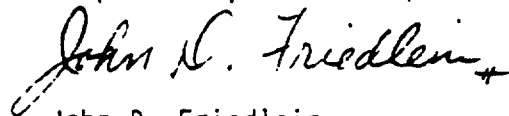
RAIL AND MOTOR TARIFFS - GYPSUM PLANT DATA

This is a subject presently on the committee's agenda in which it is hoped a compilation of all freight rate tariffs

used by all members of the Association, can be collated into some logical and useful form to benefit the entire membership. As generally envisioned at present, all members would develop rail and motor carrier tariff data, following an agreed upon uniform format, used in their respective transportation operations. This data would include such information as shipping origin, rail or motor carrier name, tariff number and related information, type of carrier (regular route common, irregular route common, contract), and territorial application (intrastate, interstate - naming actual states included in authority). Each member would compile this information for each carrier used at each of his shipping facilities. The data would then be submitted to the Association which would act as the data collection bank to compile and distribute to the membership as an aid in transportation operations throughout the industry.

A further report covering industry transportation subjects of interest will be made at the semiannual meeting.

Respectfully submitted,

A handwritten signature in dark ink, reading "John D. Friedlein" with a stylized flourish at the end.

John D. Friedlein
Chairman

REPORT OF THE
MATERIALS HANDLING COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

The Materials Handling and Traffic Committees will meet in a combination two-day meeting schedule on September 13 and September 14 in the Buffalo, New York area.

The most continuing important item on the Materials Handling Committee agenda is the test program with conventional underframe flat bed railroad cars being conducted cooperatively by the Association of American Railroads and the Gypsum Association. This and other significant items to be reviewed at the meeting are summarized in the following:

ASSOCIATION OF AMERICAN RAILROADS-GYPSUM ASSOCIATION TESTS

Following the cooperative impact tests held at Sweetwater, Texas on March 1, 1972, the Gypsum Association loading submittal was approved for loads shipped on cushion underframe equipment, and will be published in the AAR General Rules later this year. Shipments with cushion underframe equipment are reportedly being satisfactorily handled.

A second test program was initiated early in April covering conventional (non-cushion underframe) flat car shipments. Two-hundred test loads were included as follows:

50 conventional cars with 4" spacers and 1/2" x .031 steel tie-down bands
50 conventional cars with 4" spacers and 3/4" x .025 steel tie-down bands
50 conventional cars with 8" spacers and 1/2" x .031 steel tie-down bands
50 conventional cars with 3" spacers and 3/4" x .031 steel tie-down bands

Again during the test program, as had occurred during the cushion underframe shipments, the AAR reported that some bulkhead flatcar shipments were not being loaded according to the approved submittal - with particular emphasis on the failure to nail dunnage spacers together.

The Manufacturing and Mining Committee again assisted in emphasizing the importance of this program to the industry membership.

The test program is now complete and the results are scheduled to be discussed with the AAR October 5-6, 1972 meeting in Chicago, Illinois.

The continuing emphasis for the individual loading locations must be: if properly loaded, flat cars will arrive at destination trouble-free.

MATERIALS HANDLING TRAINING FILM

The Gypsum Association training film, primarily showing the proper loading of flat bed rail cars in accordance with AAR

mandatory loading standards, will be reviewed by the committee at the meeting. The film emphasizes the critical loading procedures, such as - no void between any two stacks in the entire load with the maximum space available between units being the thickness of the paper separators and no more.

It is recommended that the film be purchased and used periodically at each gypsum plant. Loading crews change and procedures differ. Repeated use of the film will assist in training plant loading personnel and hopefully correct our loading deficiencies and thereby improve our relationship with the railroads.

MATERIALS HANDLING MANUAL

Revisions to the second edition of the manual will be reviewed including increased emphasis on truck loading, safety and OSHA requirements, and improved product storage methods. Many of the individual items discussed at the meeting will be incorporated in the second edition.

Purchase of the second edition and disposal of all first editions are strongly recommended.

IMPROVED MATERIALS HANDLING PROCEDURES

New developments in the gypsum materials handling field include:

- (1) The Plastic Wedge, which was recommended at the last meeting and can be purchased at a cost of approximately \$15 each, is gradually finding increased acceptance.

- (2) Development of Promotional Program Showing Materials Handling Equipment at the Dealer Level - This information is still being developed to provide several pages for inclusion in the manual showing the various types of equipment used.
- (3) Poly Tarp Truck and Rail Car Covers - The specification which was submitted to cover the minimum requirements for covers will be expanded to include pre-shaped slip covers.
- (4) Loading Diagram for Truck Loading Gypsum Paper will be reviewed for inclusion in the Materials Handling Manual.
- (5) Loading Diagram for Truck and Rail Loading of Ready Mix Joint Compound to be included in future revisions to the Materials Handling Manual.
- (6) Shrink Film Packaging will be reviewed and will continue to be carried on the committee agenda. Presently, there is no economic practical application in handling gypsum products, but it is anticipated that future progress will change that situation.
- (7) Materials Handling Safety Programs. Current materials handling safety programs will be discussed with particular emphasis on the Occupational Safety and Health Administration Legislation.

The increased emphasis on the shipper's responsibility in truck shipments will be reviewed due to the increase in legislation and legal action which indicates that more attention must be paid to this activity. Additional information will be developed for inclusion in the Materials Handling Manual.

DUNNAGE CONSERVATION PROGRAM

The dunnage conservation program on rail cars which was started several years ago is now considered a success.

Dunnage conservation on trucks is becoming an item of increasing concern due to increase in truck shipment volume and dunnage disposal problems at the dealer distribution level.

NATIONAL LUMBER AND BUILDING MATERIAL DEALERS ASSOCIATION

Requests for standardized modular units on flat car shipments will be reviewed and retained as an open item.

SPRING MEETING

The next meeting of the joint Traffic and Materials Handling Committees will be held in the Southern California area.

Additional current significant materials handling subjects will be discussed at the semiannual meeting.

Respectfully submitted,

E. R. Kiehl #

E. R. Kiehl,
Chairman

REPORT OF THE
SAFETY COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

This report has been prepared in advance of the Safety Committee's fall meeting which will be held on September 21, 1972 at the Sheraton Palace Hotel in San Francisco. On the day preceding this meeting the committee will present a seminar for member company plant representatives, who will gather to exchange accident prevention information and hear an official of the Occupational Safety and Health Administration review the requirements of this new Federal act. A more complete report regarding this seminar and committee meeting will be presented at the Association's semiannual meeting in October.

During the first six months of 1972, plants participating in the Gypsum Association Safety Contest recorded a total of 56 disabling injuries to establish an accident frequency of 4.81 injuries per million manhours worked. This rate compares unfavorably with the ten year high rate recorded in 1971 (4.75), the average of the three previous years (3.89), or the rate for the first six months of 1971 (4.00).

In reviewing the four divisional groupings used for contest purposes, only plants of the Citation Division succeeded in reducing accident frequency from a three year average of 3.88 to 2.26 for the first six months. The remaining divisions all

recorded increases, with the Triumph Division sustaining the highest frequency at a rate of 0.41. However, it is encouraging to note that of the 74 participating plants, 40 could boast accident free records at the half way mark.

The accident prevention activities of the Association in 1971 brought recognition from the National Safety Council in the form of an Association Safety Award for "distinguished service in promoting safety within the gypsum industry". Judged outstanding among last year's programs was the OSHA slide presentation developed to assist in explaining the act to the industry's supervisory personnel.

The following is a summary of programs which the Safety Committee is currently engaged:

Industry Safety Manual

A second edition of the Gypsum Association Safety Manual is now being readied for publication with important new sections dealing with the control of material handling hazards.

Communications

The format for the Safety Bulletin and the Fleet Safety Newsletter has been revised to include a greater number of contributions from member plants. Consideration is also being given to the inclusion of a section in which serious accidents are reviewed and preventative measures outlined. The exchange of this

type of information could lead to the development of a manual outlining safe procedures for the control of the industry's most frequent type of accidents.

Safety Posters

A new series of safety posters have been developed for distribution in 1973. These posters, owing to their industry identification, will provide an additional element of thrust for member plant safety programs.

Industrial Hygiene

Information pertaining to in-plant environmental regulations will continue to be reviewed and disseminated by the committee as an aid to the establishment of effective programs dealing with the control of dust, noise, heat and other factors affecting employee health.

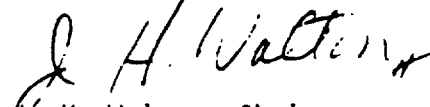
Safety Legislation

Jurisdiction remains clouded as to the inspection responsibility for gypsum plants between the Bureau of Mines and the Occupational Safety and Health Administration. Until this controversy is clearly resolved, the industry remains subject to dual inspection, reporting and regulatory compliance. The committee will continue to closely follow developments in this area. Likewise, the committee will continue to review proposed standards and regulations from both Federal agencies and seek to provide official interpretations of newly promulgated standards affecting the industry.

Safety Training

On March 15, 1972, the Safety Committee held the first accident prevention seminar preceding the Cherry Hill, New Jersey Safety Committee Meeting. More than 70 persons representing 15 plants and 6 companies attended this day long workshop. The favorable comments of those participating at Cherry Hill set the stage for the San Francisco seminar. The utilization of accident case histories will focus attention on many of the industry's most difficult accident prevention areas and foster an important exchange of information, views and techniques between operating managers.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "J. H. Walton". The signature is fluid and cursive, with a large initial "J" and a stylized "W".

J. H. Walton, Chairman
Safety Committee

REPORT OF
GYPSUM ASSOCIATION SAFETY CAMPAIGN
FOR THE
SIX-MONTH PERIOD ENDING JUNE 30, 1972

Presidential

All establishments with an exposure for the six-month period of over 200,000 or more man-hours:

<u>Plants</u>	<u>Total Plant Rating</u>
United States Gypsum Company, Plaster City, California	-0-
United States Gypsum Company, Fort Dodge, Iowa	-0-
United States Gypsum Company, Southard, Oklahoma	-0-
United States Gypsum Company, Gypsum, Ohio	-0-
National Gypsum Company, Savannah, Georgia	-0-
United States Gypsum Company, Jacksonville, Florida	-0-
United States Gypsum Company, Sweetwater, Texas	-0-
United States Gypsum Company, Shoals, Indiana	-0-
National Gypsum Company, Shoals, Indiana	-0-
National Gypsum Company, Bronx, New York	-0-
(United States Gypsum Company, Plaster City, California, had highest man-hours)	
Georgia-Pacific Corporation, Gypsum Division, Acme, Texas	3.66
Georgia-Pacific Corporation, Gypsum Division, Brunswick, Georgia	4.77
United States Gypsum Company, Staten Island, New York	5.66
United States Gypsum Company, Stony Point, New York	9.48
United States Gypsum Company, Oakfield, New York	14.02
National Gypsum Company, Clarence Center, New York	18.12
National Gypsum Company, Baltimore, Maryland	19.00

Citation

All establishments with an exposure for the six-month period of over 155,000 but less than 200,000 man-hours:

<u>Plants</u>	<u>Total Plant Rating</u>
United States Gypsum Company, Saltville, Virginia	-0-
United States Gypsum Company, River Rouge, Michigan	-0-
United States Gypsum Company, Philadelphia, Pennsylvania	-0-
United States Gypsum Company, Norfolk, Virginia	-0-
Georgia-Pacific Corporation, Gypsum Division, Fort Dodge, Iowa	-0-
United States Gypsum Company, East Chicago, Indiana	-0-
The Celotex Corporation, Port Clinton, Ohio	-0-
The Flintkote Company, Gypsum Products Division, Sweetwater, Texas	-0-
National Gypsum Company, National City, Michigan	-0-
National Gypsum Company, Medicine Lodge, Kansas	-0-
The Celotex Corporation, Fort Dodge, Iowa	-0-
The Celotex Corporation, Hamlin, Texas	-0-
(United States Gypsum Company, Saltville, Virginia, had highest man-hours)	
National Gypsum Company, Fort Dodge, Iowa	5.46
National Gypsum Company, Rotan, Texas	5.83
Georgia-Pacific Corporation, Gypsum Division, Akron, New York	6.25
National Gypsum Company, Westwego, Louisiana	6.30
The Flintkote Company, Gypsum Products Division, Camden, New Jersey	6.35
The Flintkote Company, Gypsum Products Division, Las Vegas, Nevada	12.32

Triumph

All establishments with an exposure for the six-month period of over 118,500 but less than 155,000 man-hours:

<u>Plants</u>	<u>Total Plant Rating</u>
United States Gypsum Company, Baltimore, Maryland	-0-
National Gypsum Company, Tampa, Florida	-0-
Kaiser Cement and Gypsum Corporation, Delanco, New Jersey	-0-
Georgia-Pacific Corporation, Gypsum Division, Blue Rapids, Kansas	-0-
National Gypsum Company, Waukegan, Illinois	-0-
Georgia-Pacific Corporation, Gypsum Division, Sigurd, Utah	-0-
(United States Gypsum Company, Baltimore, Maryland, had highest man-hours)	
Kaiser Cement and Gypsum Corporation, Jacksonville, Florida	6.51
United States Gypsum Company, Charlestown, Massachusetts	7.03
Georgia-Pacific Corporation, Gypsum Division, Grand Rapids, Michigan	7.05
The Flintkote Company, Gypsum Products Division, Savannah, Georgia	7.53
United States Gypsum Company, Empire, Nevada	8.33
Georgia-Pacific Corporation, Gypsum Division, Wilmington, Delaware	13.73
National Gypsum Company, Burlington, New Jersey	13.78
Kaiser Cement and Gypsum Corporation, Long Beach, California	14.29
National Gypsum Company, Portsmouth, New Hampshire	14.58
Kaiser Cement and Gypsum Corporation, Antioch, California	14.59
Texas Gypsum Company, Inc., Irving, Texas	14.79
Georgia-Pacific Corporation, Gypsum Division, Buchanan, New York	30.38

Peerless

All establishments with an exposure for the six-month period of less than 118,500 man-hours:

<u>Plants</u>	<u>Total Plant Rating</u>
United States Gypsum Company, Sperry, Iowa	-0-
National Gypsum Company, Lorain, Ohio	-0-
Big Horn Gypsum Company, Cody, Wyoming	-0-
National Gypsum Company, Long Beach, California	-0-
United States Gypsum Company, Alabaster, Michigan	-0-
United States Gypsum Company, Sigurd, Utah	-0-
National Gypsum Company, Richmond, California	-0-
National Gypsum Company, Phoenix, Arizona	-0-
The Celotex Corporation, Edgewater, New Jersey	-0-
United States Gypsum Company, Santa Fe Springs, California	-0-
Georgia-Pacific Corporation, Gypsum Division, Lovell, Wyoming	-0-
United States Gypsum Company, Heath, Montana	-0-
(United States Gypsum Company, Sperry, Iowa, had highest man-hours)	
Grand Rapids Gypsum Company, Grand Rapids, Michigan	8.47
United States Gypsum Company, New Orleans, Louisiana	8.60
National Gypsum Company, New Haven, Connecticut	10.13
The Flintkote Company, Gypsum Products Division, Fremont, California	12.13
United States Gypsum Company, Galena Park, Texas	20.19
American Gypsum Company, Albuquerque, New Mexico	22.20
Kaiser Cement and Gypsum Corporation, Seattle, Washington	22.36

GYPSUM ASSOCIATION! SAFETY CAMPAIGN
FREQUENCY RATE FIGURES BY CLASSES
FOR SIX MONTHS - 1972

	<u>Total Number Man-Hours</u>	<u>Total Number Accidents</u>	<u>Frequency Rates</u>
Presidential	4,342,221	18	4.15
Citation	3,097,311	7	2.26
Triumph	2,497,004	21	8.41
Peerless	<u>1,711,097</u>	<u>10</u>	<u>5.84</u>
Totals	11,647,633	56	4.81

REPORT OF THE
MANUFACTURING AND MINING COMMITTEE
TO THE MEMBERSHIP
SEPTEMBER 8, 1972

The Manufacturing and Mining Committee continues its schedule of one meeting per year falling on the day prior to the annual meeting in the spring. However, at a date which follows preparation of this report, but which will occur before the Chairman's verbal report to the membership, a special task force will be convened from the committee to discuss certain aspects of the committee's functions as they relate to federal legislative regulations impacting on our businesses. This point will be touched on later in this report.

ENVIRONMENTAL PROTECTION

The usual activity in connection with environmental protection has been continued. The sound slide film and tape recorder commentary which essentially finish the "We Live Here Too" project have now been completed as authorized at the annual meeting, and individual sets are available to the members for a nominal cost. It is expected that this material will prove of substantial value to most plant locations.

On July 18, 1972, a representative of the Gypsum Association, who is an associate member of the Manufacturing and Mining Committee and an expert in environmental protection matters, appeared before the Environmental Protection Agency in Washington to hear

the proposed discharge limitations for the cement, lime, gypsum, asbestos and flat glass industries pertaining to water pollution regulations. He found it necessary to file objections to many of the proposals on the basis that they were unrealistic for our industry. Results of his objections in terms of accomplishing a change in the regulations are not known at this time.

LAND PRESERVATION AND RESTORATION

Although there has been no activity in the area of land preservation and restoration since our last report, it is expected that the committee will propose that a unified approach to such activity be initiated in areas where several gypsum plants are operating, beginning with an Association-sponsored meeting of representatives of each company operating in that area. Such an approach should not only yield optimum results for the communities involved, but might well be of substantial assistance to the member companies in arriving at the most effective solution to land restoration problems.

MATERIALS HANDLING LIAISON

The Manufacturing and Mining Committee continues to be active in support of the Materials Handling Committee - particularly with regard to flat car loading procedures and practices. The materials handling film proposed earlier has been completed, the test shipments agreed upon by the Association of American Railroads have been made and in general, we believe that an improved situation

in the area of flat car loading exists. Support of the Materials Handling Committee efforts by the Manufacturing and Mining Committee members appears to be most important if our position with the railroads is to be protected.

SEVERANCE TAX

Possible legislative activity at one level or another with regard to imposition of severance taxes continues in a number of states - notably Ohio, Indiana, Kansas, Michigan, Utah and Montana. However, no committee action has been required since the occasion of our April meeting. This matter continues to be of importance to the industry and the need for early warning and early action in problem situations continues to be of great importance.

SAFETY COMMITTEE LIAISON

The impact of OSHA regulations on industry plant operations has just begun to be felt since the time of our last meeting. Information on OSHA inspections has been exchanged and appropriate action in this area will be the subject of discussion at the task force meeting in September.

OTHER OBJECTIVES

At the present time, a number of government agencies created by federal legislation having to do with OSHA, environmental protection, equal employment opportunity, etc., are in the process of issuing administrative orders, making rules, etc., which will

impact heavily on the operations and perhaps the profitability of our industry and, for that matter, all industries. The question of whether, and to what extent, Association activity in the area of monitoring and then influencing this rule making is desirable, and/or justified, is a matter which will be discussed at the special task force meeting of the Manufacturing and Mining Committee mentioned above and will be reported on verbally to the membership in October, with such recommendations as may seem appropriate.

FUTURE COMMITTEE MEETINGS

Continuation of the present schedule for a single annual committee meeting is planned.

A further report covering the Manufacturing and Mining Committee activities will be made at the semiannual meeting.

Respectfully submitted,

W. W. Holloway
W. W. Holloway,
Chairman

EVALUATION OF EXPOSURE TO ASBESTOS DURING MIXING AND SANDING OF JOINT COMPOUNDS

GYPSUM ASSOCIATION
Denver, Colorado

INTRODUCTION

The Gypsum Association retained George D. Clayton and Associates to conduct an industrial hygiene survey at a test site located in Denver, Colorado. The purpose of the survey was to determine the concentrations of airborne asbestos to which workers were exposed during mixing and sanding of joint cement compounds and to interpret the results in terms of potential health hazards with particular reference to regulations promulgated under authority of the Occupational Safety and Health Act of 1970. This study was conducted on November 19, 1973 by Mr. Robert D. Soule of Clayton and Associates. Results of that study are reported herein.

BACKGROUND

The Gypsum Association, located at 1603 Orrington Avenue in Evanston, Illinois is a trade association which represents ten to fifteen industrial companies which are engaged in the manufacture of products incorporating gypsum or gypsum-like materials. As with most industrial concerns, the activities of the Gypsum Association have become more broad with the passage and implementation of federal regulations such as the Metal and Non-Metallic Mine Safety Act and the Occupational Safety and Health Act. Technical committees composed of personnel from companies comprising the Gypsum Association have been established with particular interest in the occupational safety and health field. Of particular concern in this respect was the potential hazard associated with exposure of workers to airborne asbestos during mixing and sanding of compounds used to seal cracks and joints formed during installation of wallboard material. Although the specific formulations used by the various companies manufacturing and supplying the joint compound vary, it is understood that essentially all of them incorporate asbestos in the product whether as a dry compound or a ready-mix product.

In order to evaluate the exposure of workers to asbestos during handling and use of the joint compound products, the Gypsum Association decided to undertake a test program during which several products would be mixed and sanded. George D. Clayton and Associates was retained to collect and analyze samples which would represent the exposure of workers engaged in the study. The tests were performed on November 19, 1973 in a development of townhouses known as King's Mill Townhouses, which were under construction in a suburban area north of Denver, Colorado.

POTENTIAL HEALTH HAZARD ASSOCIATED WITH EXPOSURE TO ASBESTOS

Asbestos is a generic term referring to various mineral silicates. The types used most widely in industrial applications include chrysotile, or "white asbestos" (a hydrated magnesium silicate), amosite,

Hygienists has proposed a TLV of five fibers (greater than five micrometers in length) per cubic centimeter of air. This standard is based on the membrane filter technique with actual microscopic fiber counting at 400-450X magnification using phase contrast illumination.

The Occupational Safety and Health Administration (OSHA) has established the above concentration (five fibers, greater than five micrometers in length, per cubic centimeter of air) as an emergency standard and have announced that, effective July 1, 1976, the acceptable limit for an eight-hour, time-weighted average exposure will be reduced to two fibers/cc. In addition, OSHA has established the concentration of ten fibers (greater than five micrometers in length) per cubic centimeter of air as an acceptable ceiling concentration. Workers shall not be exposed to concentrations of asbestos in excess of this value, regardless of duration of exposure.

SAMPLING AND ANALYTICAL METHODS

The air sampling conducted to evaluate exposures of workers to asbestos was all of the "breathing zone" type. These samples were collected by drawing air through 37-mm diameter membrane filters (Millipore Type AA) at a rate of about two liters per minute using small, battery-operated pumps (Mine Safety Appliances Company, Model G). The sampling units were worn by the workers engaged in either mixing or sanding the joint compound; the pump was attached to the belt and the sampler head fastened on the outside of the worker's shirt at approximate breathing zone height. Thus, these samples were representative of the time-weighted average conditions to which the men were exposed during the sampling period. The sampling head consisted of a three piece cassette (Millipore); during sampling the face cap was removed and the filter was used in an "open face" mode with the filter positioned slightly downward so as to minimize dust falling directly onto the filter.

Sampling was conducted for the entire duration of the mixing operations but because of the higher anticipated concentrations associated with sanding of the joint compounds it was decided to change filters approximately every ten minutes. Sampling during the sanding on the various joint compounds was conducted over a total period of sixty minutes. Therefore six consecutive ten-minute samples were obtained for each sanding test. In addition to the ten-minute tests, samples were collected over thirty-minute periods as well, i.e., two consecutive 30-minute samples for each sanding test. After collection of each sample the filter cap was replaced and the cassette, or sampler head, was sealed immediately and prepared for transfer to the analytical laboratory.

The method of counting asbestos fibers was essentially the same as that used by the U.S. Public Health Service for the enumeration of asbestos dust on membrane filters. The description of this method first appeared in an article written by G.H. Edwards and J.R. Lynch and appeared in the Annals of Occupational Hygiene, Volume 2, pages 1-6 (1968).

analysis of the ten-minute samples was not possible. Analysis of the thirty-minute samples, which were redeposited, indicated an average concentration of 39.4 fibers, greater than five micrometers in length, per cubic centimeter of air.

3. The results of analyzing four of the six ten-minute samples collected during sanding on Joint Compound 2R indicated an average concentration of 4.2 fibers per cubic centimeter; two of the samples were too heavily loaded to analyze directly. Results of analysis of the two thirty-minute samples collected during the sanding on Joint Compound 2R indicated an average concentration of 11.1 fibers per cubic centimeter, a factor of over 2.5 times as high as the average obtained from analysis of the ten-minute samples.
4. The sample obtained during the mixing of Joint Compound 4D indicated a concentration of 7.6 fibers, greater than five micrometers in length, per cubic centimeter of air.
5. Results of analyzing four of the six ten-minute samples collected during the sanding on Joint Compound 4D indicated an average concentration of 4.4 fibers per cubic centimeter. Analysis of the two thirty-minute samples, which were subjected to the redepositing procedure, indicated an average concentration of 14.8 fibers per cubic centimeter, a factor of 3.4 times as high as results obtained from the ten-minute samples.
6. The results of analysis of five of the six samples obtained during the sanding on Joint Compound 4R indicated an average concentration of 10.8 fibers per cubic centimeter. Results of analysis of the two thirty-minute samples indicated an average concentration of 9.7 fibers per cubic centimeter, a value essentially the same as that obtained from analysis of the ten-minute samples.
7. Six of the thirteen ten-minute samples obtained during sanding on the four joint compounds indicated concentrations in excess of five fibers per cubic centimeter. Both mixing operations generated asbestos concentrations in excess of five fibers per cubic centimeter.
8. Two of the thirteen ten-minute samples collected during the sanding tests indicated concentrations in excess of ten fibers per cubic centimeter, the acceptable ceiling concentration. One of the two mixing operations generated an asbestos-in-air concentration in excess of ten fibers per cubic centimeter.
9. Of the four products tested, sanding on 2R and 4D resulted in concentrations less than, but approaching, the current acceptable limit for continuous exposure of workers, five fibers per cubic centimeter. Product 4R consistently produced very high concentrations of total dust which obscured the asbestos fibers on the samples.

exposures to below ten fibers per cubic centimeter would still have to be contended with.

2. From the standpoint of being able to eliminate or minimize the problem of excessive concentrations of asbestos being generated by handling and use of the joint compounds, consideration should be given to the following aspects.
 - a. The most effective means of eliminating the asbestos problem obviously would be to eliminate asbestos from the joint compound formulations if this is feasible. Although the specific role that asbestos plays in the joint compound formulations is not clear it is understood that manufacturers of joint compounds consider it necessary that asbestos be in the formulations.
 - b. From an engineering standpoint, it may be necessary to implement the following measures in conjunction with mixing and sanding of the joint compounds containing asbestos.
 - i. Mixing of the joint compounds could be done in such a way that the material is more effectively wetted as it is removed from the containers or could be done within an enclosure, with or without mechanical ventilation, so as to minimize the amount of asbestos fibers released into the breathing zone of the workers.
 - ii. Although the results of the air sampling reported herein indicate concentrations of asbestos fibers in excess of acceptable limits, either those currently enforced or those proposed to be made effective in July, 1976, it was obvious during the study that the sanding process in general has associated with it exposure of the worker to tremendously high concentrations of total dust. Therefore, if means were implemented to maintain the exposure of the workers to total particulate to within acceptable limits there would be an inherent control of the asbestos problem as well. Although more extensive in nature, engineering control of the total dust generated by the sanding operations is feasible. Such control techniques would include, but not be limited to, the use of a wet sanding technique and/or use of a portable local exhaust ventilation system incorporating, as the air moving device, a unit similar to common industrial vacuum cleaners and bag collectors.
3. The next phase of the testing program to control workers' exposures to asbestos during use of the joint cement compounds logically would be evaluations of the various potential engineering control concepts indicated or inferred above.

This report prepared by: Robert D. Soule

Robert D. Soule, P.E.
Vice-President, Industrial Hygiene Services

SGP 0011673

TABLE II

GEORGE D. CLAYTON & ASSOCIATES
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client			Gypsum Association		Material		Asbestos	
1973 Date	Sample No.	JOINT COMPOUND 2R Description (a)	Sampling Period		Sample Weight	Sample Volume Liters	Concentration	
			Start	Stop			Fibers >5µm/cc	
11/19	2R-S-1	Sanding compound (b)	15:48	16:18		60	12.3**	
11/19	2R-S-2	Sanding compound (b)	15:48	15:58		20	4.5	
11/19	2R-S-3	Sanding compound (b)	15:58	16:08		20	4.2	
11/19	2R-S-4	Sanding compound (b)	16:08	16:18		20	4.1	
11/19	2R-S-5	Sanding compound (b)	16:18	16:48		60	9.9**	
11/19	2R-S-6	Sanding compound (b)	16:18	16:28		20	*	
11/19	2R-S-7	Sanding compound (b)	16:28	16:38		20	3.8	
11/19	2R-S-8	Sanding compound (b)	16:38	16:48		20	*	

(a) All samples were obtained in the breathing zone of the workers.

(b) Sanding of Compound 2R was done by Mr. David Potter in King's Mill Townhouse Unit U-79. Psychrometric conditions in U-79 at 15:45 were 39°F dry bulb, 35°F wet bulb (66% relative humidity).

* too heavily loaded for direct analysis

** material on filter was taken into suspension and an aliquot redeposited for analysis

TABLE III
GEORGE D. CLAYTON & ASSOCIATES
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client Gypsum Association			Material			Asbestos		
1973 Date	Sample No.	JOINT COMPOUND 4D (a) Description	Sampling Period		Sample Weight	Sample Volume Liters	Concentration	
			Start	Stop			Fibers >5µm/cc	
11/19	4D-M	Mixing compound(b)	09:09	09:17		14.4	7.6	
11/19	4D-S-1	Sanding compound(c)	10:20	10:50		60.0	15.5**	
11/19	4D-S-2	Sanding compound(c)	10:20	10:29		18.0	5.2	
11/19	4D-S-3	Sanding compound(c)	10:29	10:40		22.0	*	
11/19	4D-S-4	Sanding compound(c)	10:40	10:50		20.0	3.7	
11/19	4D-S-5	Sanding compound(c)	10:50	11:00		20.0	4.1	
11/19	4D-S-6	Sanding compound(c)	10:50	11:20		60.0	14.1**	
11/19	4D-S-7	Sanding compound(c)	11:00	11:10		20.0	*	
11/19	4D-S-8	Sanding compound(c)	11:10	11:20		20.0	4.7	

- (a) All samples were obtained in the breathing zone of the workers.
 (b) Mixing of Compound 4D was done by Mr. Harold McDowell in King's Mill Townhouse Unit U-80.
 (c) Sanding of Compound 4D was done by Mr. James Pasquariello in King's Mill Townhouse Unit U-76. Psychrometric conditions (dry and wet bulb temperatures) were not recorded.

* too heavily loaded for direct analysis
 ** material on filter was taken into suspension and an aliquot redeposited for analysis

Gyp Assoc.
Semi-annual Rpts.