

ORIGINAL

Decision No. 46945

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation into the operations )  
 and practices of John W. Doudell ) Case No. 5320

Marvin Handler, for respondent.  
Harold J. McCarthy, for the Public Utilities Commission.  
Frank M. Chandler, for Truck Owners Association of  
 California; and W. L. Ryan, for Shell Oil Company,  
 interested parties.

## O P I N I O N

This investigation was instituted by the Commission to determine whether John W. Doudell, a highway common carrier, has been violating the safety rules and regulations promulgated by this Commission in General Order No. 93-A.

Public hearings were held before Examiner Gillard in San Francisco on November 28 and 30, and December 20 and 27, 1951, and the matter was submitted for decision at the conclusion of such hearings.

The scope of the investigation herein is confined to the maintenance, adequacy and efficiency of the air braking systems on respondent's equipment. The pertinent sections of General Order No. 93-A are as follows:

"2.101--Adequacy of Brakes. Every passenger stage or motor vehicle shall be equipped with good and efficient service brakes, adequate to control the movement of and to stop and to hold such vehicle. In addition, every passenger stage or self-propelled motor vehicle shall be equipped with a mechanically operated hand-powered auxiliary brake which shall employ a ratchet and pawl or other suitable locking and releasing mechanism to ensure the setting and holding of at least one set of brakes. If these two separate means of applying the brakes are connected in any way, they shall be so constructed that failure of any one part of the operating mechanism shall not leave the vehicle without brakes adequate to stop and hold such vehicle. When an

auxiliary brake is located on drive shaft it must be on that portion of the drive shaft directly connected to the differential.

"2.105--Brake Tubing and Hose. All brake tubing and brake hose shall be adequate in material and construction to ensure proper continued functioning; shall be sufficiently long and flexible to accommodate without damage all normal motions of the part to which they are attached; and shall be suitably secured and protected against chafing or other mechanical injury.

"2.106--Brake Tubing and Hose Connections. All connections for compressed air, vacuum, or hydraulic braking systems shall be adequate in material and construction to ensure proper continued functioning, and shall be so designed, constructed, and installed as to ensure, when properly connected, an attachment free from leaks, constrictions, or other defects. Suitable provision shall be made in every detachable connection to afford reasonable assurance against accidental disconnection.

"2.107--Brakes to be operative at all times. All brakes with which passenger stages or motor vehicles are equipped shall be operative at all times when vehicles are in service. Means may be used for reducing the braking effort on the front wheels of any passenger stage or self-propelled motor vehicle, provided that no such means shall be capable of making the front wheel brakes entirely inoperative.

"1.04--Conflict with California Vehicle Code. This General Order is not to be construed as excusing any operator from complying with the provisions of the Vehicle Code of the State of California. In the event of any conflict between the Vehicle Code and this General Order, the provisions of the Vehicle Code shall control."

Section 670 of the Vehicle Code provides, in part, as follows:

"(a) No person shall operate on any highway any motor vehicle or combination of motor vehicle and other vehicle or vehicles of a type subject to registration hereunder unless such motor vehicle or at least one unit of any such combination of vehicles is equipped with brakes adequate to bring such motor vehicle or combination of vehicles to a complete stop when operated upon dry asphalt or concrete pavement surface where the grade does not exceed 1 percent at the speeds set forth in the following table within the distances set opposite such speeds:

Miles per hour	Stopping distances
10	9.3 feet
15	20.8 feet
20	37.0 feet
25	58.0 feet
30	83.3 feet
35	113.0 feet
40	148.0 feet
45	188.0 feet

"(b) No member of the California Highway Patrol shall require a test of any vehicle for brake efficiency upon a highway at a speed in excess of 20 miles per hour."

General Order No. 99, effective January 1, 1952, cancels and supersedes Parts I to IV of General Order No. 93-A, but provides in Section 1.03 as follows:

"1.03--Pending Proceedings and Accrued Rights. No action or proceeding commenced before these rules and regulations take effect, and no right theretofore accrued, is affected by the provisions of these rules and regulations, but all procedures thereafter taken therein shall conform to the provisions of these rules and regulations in so far as the same are applicable."

Respondent commenced his trucking activities in 1923 in the dry freight field. In 1943 he purchased a bulk petroleum transportation business and discontinued most of his dry freight activities. In 1945 he commenced hauling from Zaca to Santa Maria. In July, 1951, the destination point of this movement was changed from Santa Maria to Alcatraz, and as a result respondent closed his terminal at Santa Maria and opened another at Buellton. The run between Zaca and Alcatraz, along U. S. Highway No. 101, passes over Gaviota Pass at a grade in excess of six per cent.

Respondent received a certificate in 1949 (Decision No. 43505) authorizing him to operate as a highway common carrier for the transportation of liquid petroleum products in bulk, over all principal highways in California. His main terminal, shop facilities and dispatcher are located in San Jose. He also has a shop and some mechanics at Buellton, but all major repair work is done in San Jose. Forty drivers are employed. Respondent's equipment consists of Peterbilt tractors and trucks, and various makes of trailers--Reliance, Homemade, Fruehauf and Trailmobile. All have Westinghouse Air Brake systems which were "standard" at the time of manufacture.

Prior to 1951, the record does not disclose that respondent received any citations for failure of his equipment to stop within 37 feet when traveling at 20 miles per hour, as required by Section 670 of the Vehicle Code, nor is there any indication that the Highway Patrol had ever tested his equipment in this respect. In January, 1951, allegedly at the request of one of respondent's drivers, three units (power unit and trailer, loaded) were tested in the Santa Maria area by the Highway Patrol and found to require 50, 42 and 49 feet, respectively, to stop at 20 miles per hour. Citations were issued for violation of Section 670 of the Vehicle Code. Stopping distances were determined by the officer by pacing from the point the brakes were applied to the stopped vehicle.

At the request of respondent, a mechanical test of all seven units of equipment operating in the Santa Maria area was made on January 25, 1951. The Hetzoi Brake Tester was employed--a two wheeled mechanical device which records the speed of the vehicle the instant the brake pedal is depressed, and records the stopping distance from that moment. Driver reaction time is eliminated. The seven units, at 20 miles per hour, stopped, respectively, in 64, 70, 72, 99, 64, 60 and 66 feet. The unit which required 99 feet to stop had an overload of 1,400 pounds; all others were within the legal weight limits. Results of this test were reported to respondent, but no citations were issued since the test was at respondent's request.

Three months later, on April 26 and 27, the Highway Patrol made brake tests on five of respondent's units in the Santa Maria area. Stopping distances at 20 miles per hour were 100, 94, 135, 92 and 82 feet, respectively. One unit, that which stopped in 92 feet, had an overload of 6,700 pounds. Five citations were issued. Two of the units cited on this occasion had been found deficient in the January 25th tests.

A further test was made on July 23 and 24 and five citations issued, three of them for the same equipment involved in the April citations. Stopping distances were 98, 117, 65, 74 and 70 feet. Drivers of these units were ordered to take the equipment to the shops for necessary repairs. Another check was made on July 30. Three citations were issued, only one of which involved the same equipment as tested on July 23 and 24. Stopping distances for these units were 84, 84 and 72 feet, respectively. A check of seven vehicles at Buellton on September 26, 1951, resulted in stopping distances of 62, 78, 94, 36, 57, 62, and 41 feet.

An improvement was noted in tests conducted in November, 1951. On November 1, stopping distances for ten units were 55, 54, 50, 49, 41, 37, 35, 34, 33, and 32 feet. On November 20, the results on seven vehicles were 66, 52, 49, 47, 37, 35, and 35 feet.

Respondent's operations over Gaviota Pass, since July 1, 1951, have resulted in two "run away" accidents involving fully loaded units on the southerly down slope of the grade. In the second of these accidents, which occurred on November 7, no other vehicle was involved. The unit apparently went out of control, crossed the dividing island in the four-lane highway, hit an embankment on the far side of the road, and overturned. The highway was dry and straight for 400 feet before the point of impact; there was no defect or obstruction in the highway. Respondent did not produce the driver to testify as to the cause of the accident.

The other accident occurred on July 23. Four people were killed when one of respondent's units ran into the rear of a passenger vehicle near the bottom of the grade. Respondent's unit was characterized as "out of control," but the cause of the accident was not definitely established on this record. A drive shaft was found on the highway a mile and a quarter above the accident, but

it was not connected with respondent's equipment. A diaphragm taken from one of the air chambers on the trailer was introduced into evidence. It was torn to such an extent that all the air in the brake system would escape almost immediately upon application of the brakes. However, there was testimony that the trailer brakes were functioning the day after the accident, before this diaphragm was removed. Respondent, in this instance also, made no attempt to explain the cause of the accident.

In each of these cases, the inference is strong that these vehicles at the time of the accidents were not "equipped with good and efficient service brakes, adequate to control the movement of and to stop and to hold such vehicle" as required by Section 2.101 of General Order No. 93-A, and were not "operative at all times when vehicles are in service" as required by Section 2.107 of the same General Order, and such inference will support a finding to that effect in the absence of countervailing evidence. ✓

Two transportation supervisors from the Commission made a physical inspection of 18 of respondent's units between August 30 and September 13, 1951. While the vehicles were motionless, the brakes were found to be functioning properly on seven of these units. Deficiencies on the remaining 11 were as follows:

1. A ruptured diaphragm was found at the right front brake of the trailer, with air leakage of 18 pounds per minute. Loose linkage was also found at the right front brake cylinder cam shaft connection on the trailer.

2. Air leaks due to broken or frayed air lines were discovered near the right front truck wheel, the left drive axle wheel, and the right dummy axle brake chamber. Hoses were deteriorated and spongy.

3. Air leaks were found at the right front truck wheel brake chamber and at the first air reservoir. The right rear (dummy axle) brake chamber on the truck was not operating.

4. There was no drain cock on the second air reservoir, and oil and water were found in the first air reservoir.

5. An air leak amounting to 20 pounds per minute, due to a ruptured diaphragm, was found at truck right drive axle brake chamber.

6. The air tank safety valve was leaking slightly.

7. The right front truck brake was inoperative due to improper adjustment of the slack adjuster. There was also air leakage in the service line due to a hole caused by friction with the speedometer cable; the leakage amounted to 18 pounds per minute with the speedometer cable over hole, and 70 pounds per minute when the cable was lifted.

8. There was no drain cock on the second air reservoir. The drain cock on the first air reservoir was plugged with foreign matter and the cock was in a wide open position.

9. A slight leak at the relay emergency valve connection was found.

10. The rubber air line was deteriorated and spongy at its connection near the right front end of the trailer. The condition of the brake system connections could not be determined due to a covering of hard-packed dirt and oil.

11. Air leaks were found amounting to 12 pounds per minute due to a defective air hose at its connection with the left front brake chamber.

During the brake tests made by the Highway Patrol at Buellton on September 26, 1951, a physical inspection of the seven units involved, which was made by a Commission representative,

disclosed no air leaks on three of the units; three others had leaks of 20, 20 and 18 pounds per minute, respectively, due to various loose connections. The seventh vehicle was not tested.

A similar check of the brake systems of the seven units involved, made by a Commission representative in the brake test of November 20, 1951, disclosed no air leaks on six units and leakage of eight pounds per minute, due to a defective brake chamber diaphragm, on the seventh unit.

A witness for respondent, who examined 34 pieces of equipment (17 trucks and 17 trailers) on October 3 and November 24, 1951, reported that all brake systems were good and that there were no air leaks. In the air tanks, one had excessive water, three others had approximately one-fourth cup of oil or water, and the rest were dry.

The inability of respondent's equipment to stop within the required legal limits, and the deficiencies in the air brake systems on his equipment, at least until November, 1951, almost three months after this investigation was instituted, are attributable at least in part to lax and inefficient inspection and maintenance practices in his shops. There were no records to indicate that there was any regular program of inspection or servicing of vehicles. No record of actual servicing or repair of equipment was kept. Drivers' reports indicating needed repairs were discarded after the work was performed, and no record of such repairs was kept. There was no indication of any consistent, orderly, preventive maintenance program.

On the last day of hearing herein, respondent submitted a set of forms for drivers' reports and inspection and maintenance records for equipment. The latter require specified inspections and mechanical work on a mileage basis, starting with a series of operations to be performed every 1,500 miles and including other maintenance work to be performed at other mileage intervals up to 48,000 miles.



If such a system of maintenance is carefully followed by competent mechanics, it seems probable that the numerous equipment deficiencies found by the Commission's representative can be eliminated. The improvement of the physical condition of respondent's equipment between August and November, and the consequent betterment of the record made on the brake tests, indicates that careful, systematic and intelligent maintenance is the key to an efficient braking system.

In addition to this, however, the testimony of an air brake specialist, hired by respondent during the pendency of these hearings, indicates that the braking system, even if it receives the best possible maintenance, won't consistently stop the equipment within the distances prescribed by the Vehicle Code, unless it is well constructed and integrated.

An air brake system, reduced to its simplest terms, consists of an air compressor, air tanks, brake application valve, transmission lines and release valves, air chambers, and brake rigging. In actual operation, compressed air is released from the air tank when the brake pedal is depressed, and flows to the air chambers located at each end of each axle. In the air chamber, a diaphragm is expanded, pushing a rod which turns a cam shaft and expands the brake shoes against the drum. If it is assumed that there are no air leaks, and that the brake shoes are in good condition and adequate in size, then the efficiency of the system, measured by the distance it takes to stop the equipment, depends upon (1) the amount of time elapsing between application of the brake pedal and contact between the brake shoe and drum, and (2) the proper alignment of the shoe with the drum, so that all braking surfaces of the shoe strike the drum simultaneously.

In both of these important aspects, respondent's expert testified that in his opinion this equipment as assembled by the manufacturer was deficient, with certain exceptions. The air lines had numerous right angle turns instead of being straight in so far as possible. Connections in the air lines were generally made with street elbows. A right angle turn by itself will restrict the flow of air, whereas a street elbow, which has one male threaded end, actually constricts such flow, and has the resistance equivalent of 15 feet of straight line. It should be noted parenthetically that the use of street elbows is in direct contravention of Section 2.106 of General Order No. 93-A (and Section 5.75 of General Order No. 99) which prohibits constrictions in brake tubing connections. The connection between the air line and the air chamber was likewise made with a street elbow. A 90-degree turn in the cover of the air chamber would permit a straight-line connection. The second or "dry" air tank was not elevated sufficiently to enable it to drain into the first or "wet" air tank. Relative to the brake rigging, this witness testified that the manufacturer's tolerances were too great to permit maximum efficiency, and that the allowed tolerances almost prohibited mechanical adjustments which would permit all braking surfaces of the shoe to strike the drum simultaneously. To accomplish this object, all essential parts needed realigning or remachining.

Upon the recommendation of this witness, respondent is rebuilding, or realigning and reassembling, his entire braking system to meet the deficiencies noted by this witness. At the close of the hearings herein, three units had been completed, but no tests for stopping distances had been made.

The record herein indicates that there are two factors involved in respondent's operation which could increase the normal

wear and tear on the braking system. First is the commodity he carries--bulk oil. When the brakes are applied, the oil surges forward and strikes the front end of each tank. The force of this impact, and the resulting additional strain on the brakes, increases with both the speed of the vehicle and the rapidity with which the brakes are applied. Secondly, respondent's operation over Gaviota Pass requires constant application of the brakes on the downside even though the speed of the vehicle is restricted with low gear ratios. Respondent is admonished to minimize these dangers, in so far as possible, by such control measures as will insure that his drivers at all times descend the Gaviota grade in a gear ratio which will require the least application of the brakes and operate the equipment in a manner and at a speed that will most likely abolish the necessity of emergency brake applications.

Upon full consideration of the record, we find:

1. That respondent has failed to equip his vehicles with good and efficient service brakes, adequate to control the movement of and to stop and to hold such vehicle, in violation of Section 2.101 of General Order No. 93-A.
2. That respondent has failed to suitably secure and protect all brake tubing against chafing or other mechanical injury, in violation of Section 2.105 of General Order No. 93-A.
3. That respondent has failed to install and maintain brake tubing connections free from leaks and constrictions, in violation of Section 2.106 of General Order No. 93-A.
4. That respondent has failed to equip his vehicles with brakes that are operative at all times when such vehicles are in service, in violation of Section 2.107 of General Order No. 93-A.
5. That respondent has operated vehicles upon the highway equipped with brakes which are inadequate to bring such vehicles to

a complete stop within 37 feet when traveling at 20 miles per hour, in violation of Section 670 of the Vehicle Code.

6. That respondent sought the help and advice of other truck owners and air brake engineers immediately after the January, 1951 brake tests, and was attempting continuously thereafter to correct the deficiencies, and the cause for the deficiencies, in his air brake equipment and system. ✓

It is only because of this timely activity by respondent, and the indication therefrom of his intention to comply with the safety orders of the Commission, that we are not at this time issuing an order suspending respondent's authority to operate.

O R D E R

Public hearings having been held in the above-entitled proceeding, and the Commission having found that respondent has maintained and operated motor vehicle equipment in violation of General Order No. 93-A and California Vehicle Code, Section 670,

IT IS ORDERED:

(1) That John W. Doudell be and he is hereby ordered to cease and desist from maintaining or operating his motor vehicle equipment in violation of Sections 2.101, 2.105, 2.106 and 2.107 of General Order No. 93-A, and Section 670 (a) of the Vehicle Code.

(2) That respondent shall institute and maintain inspection and maintenance practices in his shops, which are designed to prevent and discover and repair all deficiencies in his air braking systems.

(3) That respondent shall proceed as expeditiously as possible with the rehabilitation of his air braking systems, and shall submit to the Commission written reports on the progress

thereof once each month commencing with the first day of the first month after the effective date of this order.

(4) That respondent shall not permit any piece of equipment to be operated upon the highway unless such equipment, at the commencement of each new shift of drivers, is tested and found not to have air leaks of more than four pounds per minute. Such test shall be made by each driver with maximum air pressure in the tanks, with motor turned off, and with the brake pedal fully depressed for a period of not less than 30 seconds.

The effective date of this order shall be twenty (20) days after the date hereof.

Dated at San Francisco California, this 1st day of April, 1952.

[Signature]  
President  
James J. Casper  
[Signature]

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Commissioners

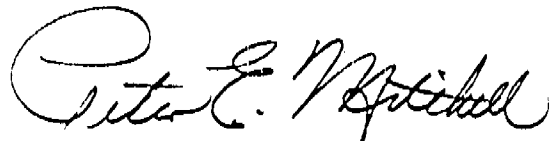
CASE 5320 - DISSENTING OPINION

In Decision 44673 in Case 5136, issued August 15, 1950, in the Commission's investigation of the matters affecting safety in the use of passenger stages and auto trucks upon the highways of California, in the concluding paragraph of subject matter 15, Enforcement, the Commission stated, "It is also our conclusion in connection with those carriers under the Commission's jurisdiction, including both certificated and permitted carriers, that the Commission should proceed on its own motion to institute proceedings looking to cancellation or suspension for specified periods of the operative rights of those carriers whose records indicate a consistent and flagrant disregard of the provisions of the Vehicle Code." The facts recited in the majority opinion and in findings 1 to <sup>5</sup> inclusive, in my opinion, indicate a consistent and flagrant disregard not only of the provisions of the Vehicle Code, but of the Commission's General Order 93-A.

The order in the instant proceeding, therefore, should provide either for the cancellation or suspension for a specified period of the operative rights of the respondent as a carrier of bulk petroleum, as to which the opinion indicates the greater amount of hazard in respondent's operation.

  
Commissioner.

*I concur in this dissent*

  
Commissioner