

STATE ARBITRATION BOARD

1022 LOTHIAN DRIVE
TALLAHASSEE, FLORIDA 32312
PHONE: (904) 385-2852

OCTOBER 25, 1990

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12-11-07
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+ + + NOTICE + + +

In the case of Danis Industries Corporation versus the Florida Department of Transportation on Project No. 15150-3547 in Pinellas County, Florida, both parties are advised that State Arbitration Board Order No. 5-90 has been properly filed on October 25, 1990.

H. Eugene Cowger

H. Eugene Cowger, P.E.
Chairman & Clerk, S.A.B.

S.A.B. CLERK

OCT 25 1990

FILED

Copies of transcript & Order to :

R.D. Buser P.E., Director of Construction/FDOT

Bruce K. Collins, Contracts Manager/Danis Industries Corporation

Copy of Order to: Mulberry Construction Comapny

STATE ARBITRATION BOARD

ORDER NO. 5-90

RE:

Request for Arbitration by
Danis Industries Corporation on
Job No. 15150-3547 in
Pinellas County

The following members of the State Arbitration Board
participated in the disposition of this matter:

H. Eugene Cowger, P. E. Chairman
Frank Carlile, P. E. Member
Sam Turnbull, P. E. Member

Pursuant to a written notice, a hearing was held on a
request for arbitration commencing at 11:15 a. m., Friday,
September 14, 1990.

The Board Members, having fully considered the evidence
presented at the hearing, , now enter their order No. 5-90 in
this cause.

ORDER

The Contractor presented a request for arbitration of a
claim in the amount of \$89,208.17 for additional costs he
incurred in installing high strength structural bolts in
splices in steel girders and related additional overhead
costs.

The structural steel subcontractor presented the
following information to support his claim that the
additional costs incurred during installation of bolts were
caused by improper actions of the Department of
Transportation while the work of tensioning high strength
bolts was under way:

1. Prior to the commencement of installing structural bolts,
the Department of Transportation (DOT) presented us with a
procedure for installing the bolts. This procedure provided
for use of the "Turn of the Nut" method for tightening the
bolts and set out a method for calibrating impact wrenches to
achieve the proper "snug tight" condition. The procedure
consisted of placing a test bolt in a Skidmore device,
tightening the bolt to a tension reading of 10,000 pounds and

then turning the nut the required rotation ($1/3$ of a turn). If the final tension reading was between 52,000 and 54,000 pounds the "snug tension" was correct. If not, the test was repeated with different "snug tension" values until a final tension between 52,000 and 54,000 pounds was achieved. When the correct "snug tension" was determined, the impact wrenches were adjusted to stop at that tension and then used to snug bolts.

2. No problems were encountered at first, but shortly after tightening of the bolts began, we encountered problems. During the daily calibration in the Skidmore device, our impact wrench could not turn the bolt sufficiently to achieve even 39,000 pounds tension, the minimum fastener tension required by the specifications.

3. In a meeting on July 17, 1989 with DOT field engineers, it was agreed that the acceptance criteria for tightening bolts would be either: (1) $1/3$ of a turn from snug; or (2) development of 580 foot-pounds of torque. We calibrated our impact wrenches to 580 foot-pounds torque and proceeded.

4. On July 19, 1989, DOT representatives brought to the site some bolts left over from an earlier project. Using the procedure furnished by DOT, we ran tests and found that the tension set out in the procedure furnished by DOT could consistently be achieved by our equipment using these bolts. At this point DOT instructed us to cease work on this operation.

5. A series of meetings followed over the next few days and we performed tests, using the Skidmore device, on bolts to which various lubricants had been applied. Questions arose because in some instances the bolt assemblies failed at approximately 55,000 pounds tension by stripping of threads in the nut and, when bolts were checked with a torque wrench after tightening, the torque values were quite variable.

6. On July 28, 1989, DOT issued instructions as to the procedure to be used for tightening bolts and productive work resumed. The procedure essentially involved loosening nuts in

all connections, lubricating the threads, resnugging bolts and turning them 1/3 turn.

7. The costs for which we are claiming compensation are related to: (1) delays incurred during the period between July 17, 1989, the day we first encountered problems in tightening bolts, and July 28, 1989 the day DOT issued a workable procedure for tightening bolts; (2) the work of loosening previously snugged bolts, lubricating them and resnugging them; and (3) extra equipment required by and loss of efficiency caused by having to install bolts after the steel was erected instead of on the ground. We set up a separate account number for accumulating these costs.

The prime contractor presented the following information to support this claim for additional overhead costs:

1. The delays to our subcontractor resulting from actions of DOT caused us to incur 16 days additional project site overhead and 16 days extended home office overhead (Eichleay Computation).

The Department of Transportation rebutted as follows:

1. We essentially agree with the description of the events provided by the subcontractor. However, we disagree that DOT is responsible for the delays and extra work encountered by the subcontractor in installing high strength structural bolts.
2. The bolt tightening procedure presented at the beginning of work that provided for tightening of bolts to approximately 10,000 to 12,000 pounds tension during the snugging operation essentially benefited the subcontractor. The higher than usual snug tension which is allowed under this procedure permitted the Contractor to use his large impact wrenches for the snugging operation instead of having to use smaller impact wrenches or hand wrenches for that operation.
3. There was never a departure from the "Turn-of-the-Nut" method for tightening bolts. The problems encountered by the subcontractor were due to his failure to lubricate the

threads of the bolts and nuts which, in accordance with the specifications, were electroplated with a zinc coating.

4. The contractor is responsible for the means and methods of construction and his subcontractor was aware of the concept of using of lubricants on bolts and nuts on July 20, 1989, the third day after the problem with achieving 1/3 turn of the nut arose. The subcontractor attempted to convince DOT representatives that there is a direct relationship between the tension in a bolt and the torque applied in tightening it. He continued to install bolts in connections and tighten them to a snug tension of 10,000 pounds without lubricating them between July 20th and July 28th.

5. During the time period over which the subcontractor is claiming additional compensation, he encountered significant delays because of mis-aligned holes or lack of needed shim plates and at one point exhausted his supply of approved fasteners.

6. We did not issue instructions to the subcontractor to stop work. We merely advised him when methods or results were not in accordance with the contract requirements and/or the work was not acceptable.

7. The final section of the bridge deck was placed on November 10, 1989 and the mainline paving on approaches to the bridge was not completed until mid-January 1990. This shows that the bridge items were not the controlling items of work on the project.

The Board, in considering the testimony and exhibits, found the following points to be of particular interest:

1. The basic problem was inability of the subcontractor to achieve 1/3 turn of the nut, and thus the required tension in the bolt, with unlubricated bolts. Resolution of this problem was complicated by failure of bolts in the Skidmore device by stripping of threads in the nut at tension values (55,000 lbs.) which were substantially below tensile strength of the bolts as indicated by tests (65,000 lbs.).
2. Subarticle 460-8.1 of the DOT Standard Specifications for

Road and Bridge Construction incorporates by reference the "Specification for Structural Joints Using ASTM A-325 or A-490 Bolts" as approved by the Research Council on Structural Connections of the Engineering Foundation. August 14, 1980. Commentary C-1 in that specification contains the statement, "Coated nuts for use with ASTM A-325 bolts coated with any metallic coating other than hot-dip galvanizing should be tapped oversize in accordance A-563 before coating and be provided with an additional lubricant, that should be clean and dry to the touch".

3. There was indecision by DOT field personnel over use of a lubricant on threads, the variation in torque values when a lubricant was first used and the significance of failure of bolt assemblies at lower than expected tension values.

4. The steel erection subcontractor continued to install and snug bolts after being advised by DOT that his method of tightening bolts was unsatisfactory.

From the foregoing and in light of the testimony and exhibits presented, the State Arbitration Board finds as follows:

The Department of Transportation is ordered to compensate the Contractor in the amount of \$25,000.00 for his claim. This is for additional costs incurred in bolting.

The Department of Transportation is directed to reimburse the State Arbitration Board the sum of \$ 227.00 for Court Reporting Costs.

Tallahassee, Florida

Dated: 25 October 1990

H. Eugene Cowger
H. Eugene Cowger, P. E.
Chairman & Clerk

Certified Copy:

Frank Carlile
Frank Carlile, P. E.
Member

H. Eugene Cowger
H. Eugene Cowger, P. E.
Chairman & Clerk, S.A.B.

Sam P. Turnbull
Sam P. Turnbull, P. E.
Member

25 October 1990
Date

S.A.B. CLERK
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S.A.B. CLERK

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STATE ARBITRATION BOARD
STATE OF FLORIDA

DANIS INDUSTRIES CORPORATION)

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DEPARTMENT OF TRANSPORTATION)

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PROJECT NO. 15150-3547

LOCATION: Pinellas County,
Florida

ORIGINAL

RE: Hearing In The Above Matter

DATE: Friday, September 14, 1990

PLACE: 1007 Desoto Park Drive
Tallahassee, Florida

TIME: Commenced at 11:15 a.m.
Concluded at 12:45 p.m.

REPORTED BY: STEPHEN W. JACOBSEN
CSR, RPR, CP
Notary Public in and for
the State of Florida at
Large

WILKINSON & ASSOCIATES

Certified Court Reporters
P.O. BOX 1346:
Tallahassee, Florida 32317
904-224-0127



THE RECOIL NEVER FORGETS

1 APPEARANCES:

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3

MEMBERS OF THE STATE ARBITRATION BOARD:

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Mr. H. E. "Gene" Cowger, Chairman
Mr. Sam Turnbull
Mr. Frank Carlile

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APPEARING ON BEHALF OF THE DEPARTMENT OF TRANSPORTATION:

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Mr. Jim Lairscey
Mr. Gene Balter
Mr. Joe Blasewitz
Mr. Jim Moulton, Jr.
Mr. Reynold Meyer

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APPEARING ON BEHALF OF THE CONTRACTOR:

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Mr. Don Sullivan
Mr. Dave Barkley
Mr. Bruce Collins

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I N D E X

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EXHIBITS

PAGE

22

Exhibit Nos. 1 and 2 in evidence

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CERTIFICATE OF REPORTER

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P R O C E E D I N G S

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CHAIRMAN COWGER: This is a hearing of the State Arbitration Board established in accordance with Section 337.185 Florida Statutes.

Mr. Frank Carlile was appointed as a member of the Board by the Secretary of the DOT.

Mr. Sam Turnbull elected by the construction companies under contract to the DOT.

These two members choose me, Gene Cowger to serve as the third member of the Board and as Chairman. Our terms of office began July 1, 1989 and expire June 30, 1991.

Will all persons who intend to make oral presentations or submit written information during this hearing please raise your right hand and be sworn in. (Whereupon, all witnesses were duly sworn by the Chairman.)

CHAIRMAN COWGER: The documents which put this arbitration hearing into being are hereby introduced as Exhibit No. 1. This is the contractor's request for arbitration form, and all documents that were attached to that form at the time of submittal.

This information was furnished to the Department of Transportation some several weeks ago for their review and use in preparation for the hearing.

1 Does either party have any information it wishes
2 to put into the record as an exhibit?

3 (Discussion off the record)

4 CHAIRMAN COWGER: Back on the record. During the
5 time that we were off the record, the Department of
6 Transportation submitted a document in a bound cover,
7 which we will identify as Exhibit No. 2. This is the
8 Department's position on the contractor's claim.

9 Does either party have any other information it
10 wishes to put into the record as an exhibit?

11 (Whereupon, Exhibit Nos. 1 and 2 were received in
12 evidence.)

13 CHAIRMEN COWGER: During this hearing the parties
14 may offer such evidence and testimony as is pertinent
15 and material to the controversy and shall produce such
16 additional evidence as the Board may deem necessary to
17 and understanding and determination of the matter
18 before it.

19 The Board shall be the sole judge of the
20 relevance and materiality of the evidence offered.
21 This hearing will be conducted in an informal manner.
22 The contractor will elaborate on his claim and then the
23 DOT will offer rebuttal.

24 Either party may interrupt to bring out a point
25 by coming through the Chairman. However for the sake

1 of order I must instruct that only one person speak at
2 a time.

3 Also, so that our court reporter will be able to
4 produce an accurate record of this hearing, please
5 introduce yourself the first time you speak.

6 It's appropriate now for the contractor to begin
7 his submittal. Keep in mind that we do have Exhibit
8 No. 1, your original submittal, but the Board does need
9 at least a short summary of what was said in that
10 submittal.

11 MR. BARKLEY: Dave Barkley, with Mulberry
12 Construction. I highlighted a few parts of the first
13 submittal. I don't know if it would be helpful to
14 follow. There's several copies of it.

15 CHAIRMAN COWGER: This information you've given
16 us is all contained in Exhibit No. 1, and that you've
17 just highlighted portions of it for us?

18 MR. BARKLEY: That's correct. The first part of
19 the job we met at Greiner's office, I believe it was,
20 to go through the bolting procedures.

21 At that time the procedures which are in the back
22 of this last sheet were given to us by the DOT for
23 erection of the bridge, structural steel erection.
24 It's entitled structural steel checklist, and also at
25 the top it was marked for our superintendent, Pete, and

1 also Brian, of Greiner.

2 We read through this pretty much, just tightened
3 the bolts to the maximum allowables on the
4 seven-eighths per the code minimum 39, maximum 55-7.
5 And in here it dictated that we needed to have between
6 50 to 54,000 as final tension in the bolts.

7 We agreed with that. We put up the East Bay
8 project about a year ago following those guidelines.
9 Did the one over at Port Orange the same way. We
10 didn't have a problem with that.

11 This is turning the nut, but it's specifying
12 final tension required in these bolts. And as you read
13 through here, to snug all your bolting hardware to
14 start with, you have to know what your final tension is
15 going to be, because your third of a turn from your
16 snug condition gives you the tension load that you're
17 looking for.

18 So we started with this assumption with the
19 Skidmore, erecting bolts. We run tests in the morning
20 and they were working out, going through the morning
21 procedure of establishing snug to get that final
22 tension.

23 On the 17th, all of a sudden we didn't get
24 consistency in the bolts in the morning, and we brought
25 that to Danis' attention who got with the State.

1 They said something is not right. At that point
2 no one knew what it was. I wasn't there at the job at
3 that time, but it was assumed that possibly some of our
4 calibrating equipment was in question.

5 CHAIRMAN COWGER: May I interrupt you a minute.
6 The word consistency needs a little explanation at this
7 point. When you said you weren't getting consistency,
8 tell us a little bit about what that meant.

9 MR. BARKLEY: Okay. We would put the bolts into
10 the Skidmore in the morning, before we would get snug
11 turn to around 12,000 pounds of tension in the
12 Skidmore, turn a third of a turn and we would be
13 falling between the 50 and 54,000 pound tension range.

14 CHAIRMAN COWGER: That's when it was working?

15 MR. BARKLEY: When it was working.
16 When it wasn't working we would put the bolt in
17 there get it to 10,000 or 12,000 pounds tension, turn
18 it a third of a turn -- or we couldn't turn it a third
19 of a turn because we didn't have enough torque
20 equipment on the job site, and it was below the 39,000
21 pounds minimum allowable per the State guidelines, and
22 way below the 50,000 pounds procedure that we had been
23 given to fulfill.

24 Now, we weren't sure what was wrong. Like I say
25 at that point, they assumed the equipment was wrong,

1 the calibration equipment, the Skidmore. The wrenches
2 were wrong.

3 Then that day they went back to Greiner's office
4 and decided that they would go by a torque guideline.
5 580 foot pounds would be a sufficient tension,
6 measuring device. It's not directly related.

7 And that's also mentioned in Greiner's minutes on
8 the 26th that they had went back and decided to use a
9 torque to -- basically they would have the tension
10 required in the hardware.

11 We expedited the job. We brought our contractor
12 down from Jacksonville with hydraulic torquing
13 equipment, went for a day or two.

14 And the State brought down some bolts from the
15 East Bay job. We put them in the Skidmore, and they
16 worked. The Skidmore come back to the consistent --
17 we got the consistent relationship we had at the
18 beginning of the job.

19 We put them in, snugged to 12,000 to 14,000,
20 turned them a third of a turn and we'd come up to the
21 50,000 to 54,000 range which we were aiming for.

22 At that time they said no, we don't want to take
23 this torque relationship anymore. The splice was
24 tightened completely by torque, and they said no, stop.
25 We're not going to do that any further. That was on

1 the 19th, as referenced on the second page of the one
2 I just handed out.

3 And Greiner stopped us or advised us that was no
4 longer an acceptable procedure, that they agreed to it
5 a day or two before, but at this time by assuming now
6 that our equipment was working, by bringing down bolts
7 used on a previous State project by the State, that
8 there was another concern somewhere here.

9 Danis got a hold of the supplier, Nick Deal from
10 the House of Threads, to come down. And he recommended
11 that some of these bolts we weren't tightening, we
12 needed a lubricant.

13 We had never run into that before, not that that
14 mattered. We were a little concerned. We started
15 testing with the lubricant, aiming at the 50,000 to
16 54,000 pound range, again going by the initial
17 procedures given to us by the State.

18 We were in the 10,000 to 12,000 pounds snug, what
19 it took to take a third of a turn 120 degree rotation.
20 And we were coming into about 54,000 pounds tension,
21 but the nuts were failing with the lubricant on there.
22 The threads would strip off the nut and stay on the
23 bolt.

24 On the 21st we were doing that test and Greiner
25 said they wouldn't accept that. They were a little

1 concerned on that mode of failure.

2 On the 22nd we ran more tests on dry and
3 lubricated bolts. Again we had fastener failure at the
4 54,000 and 57,000 pound tension range by the stripping
5 of the threads in the nuts. We kept running tests and
6 tests for the next several days.

7 The 26th we started having another meeting at
8 Greiner. They stopped work. They were concerned.
9 Their minutes are in relationship here. They stopped
10 approval of the method that we had. They didn't want
11 us to going to 54,000 pounds tension when the nuts were
12 stripping out at 54, 55.

13 We left that meeting at the end of the 26th with
14 really no procedure. All of a sudden they said you
15 can't do what we told you. We don't want you aiming
16 for that 50 to 54,000 range anymore with what we were
17 doing because of the failure of the bolt connections.

18 On the 27th we had another meeting, and
19 Charlie Jones was there. And he mentioned that
20 standard practice as referenced in the meeting before
21 was not normal for lubrication of bolts. We had
22 several concerns, with failure of the nut stripping
23 out.

24 The torque wrench was pretty much ruled -- which
25 is recommended by the code if you're lubricating bolts,

1 the torque wrench isn't any use to you because the
2 amount of friction is too varied. And the inability to
3 have a snug condition with lubricated bolts. The code
4 recommends they would be hand-tightened with a stud
5 wrench, but that's too many foot pounds, because if you
6 turn it more than a third of a turn after that, the
7 connection would fail.

8 The bolt salesman was there, Charlie was there.
9 Everyone agreed that the bolts were within the
10 specifications with the State. There was no problem
11 with the bolting hardware meeting specifications on the
12 project, but possibly we were going to have to reduce
13 the tension requirements by 20 to 30 percent than what
14 we originally were told had to be obtained to be
15 acceptable.

16 And also up there in the bridge, by changing to a
17 different torque, allowing a different tension range
18 allowing torque to be used for a couple of days as an
19 allowable criteria for acceptance, there were several
20 conditions in the bridge splices.

21 Basically we had to go back and check all the
22 connections up there that had been torqued up before,
23 loosen, run a field test on lubrication bolts, see if
24 they would pass or not; dry they didn't.

25 We had to go back and relubricate all the bolts,

1 which meant loosening them all, bringing them back to a
2 lower snug condition because they were too tight
3 before, and then turning them a third of a turn to get
4 down between 39,000 and 45,000 pounds tension.
5 Forty-five was now the maximum allowable tension in
6 these bolting connections, whereas before 50,000 was
7 the minimum.

8 So everything up there that had been snug, had
9 been snugged to take a third of a turn to obtain a
10 minimum of 50,000 pounds tension in that connection.

11 We had to back those all off, lubricate. We had
12 to buy some smaller torque wrenches, which we didn't
13 have but were readily available. We couldn't have any
14 more than around 70 foot pounds as a snug condition,
15 and then turn a third of a turn. And anything that
16 came out above 45 kips in the morning was too tight.

17 So basically everything that we'd been told to go
18 for in the first part of June was a minimum of 50,000
19 pounds tension. Now we come back with these bolts
20 which are within specifications, but they could not be
21 tightened to more than 45 kips.

22 In my clarifications to the meeting, I addressed
23 that we did have to change installation procedures
24 basically by what I tried to explain.

25 All the snugging and final tensioning had to be

1 reduced by 20 to 30 percent, and everything that we had
2 done to try to obtain that first procedure would have
3 to be loosened, resnugged and then tensioned to now
4 meet the specifications that we were given.

5 They also mentioned, which was of some concern,
6 that even though this was concern over the specs of the
7 bolts that the bolts are tested separately and the nuts
8 are tested separately.

9 And they told me -- Nick said to me, which is in
10 my comments to the meeting that if the two react at a
11 lower combination and fail at a lower combination than
12 they do individually, they're still acceptable.

13 But the bolts and nuts were all sent to Law
14 Engineering and tested. Charlie Jones sent some out
15 from Law Engineering to have them in a lubricated
16 condition. I was verbally told that they had failed
17 in the mid fifties by nuts stripping, stripping of the
18 threads in the nuts.

19 CHAIRMAN COWGER: Does that about complete your
20 submittal for the moment?

21 MR. BARKLEY: Yes.

22 CHAIRMAN COWGER: We may want to get into talking
23 about the other phase of the claim, the compensation,
24 but I suggest for now we let DOT rebut and stay on the
25 issue of entitlement, if you will, please. Then we can

1 come back a little later and talk about your views on
2 the compensation that he has requested. If you would,
3 please.

4 MR. BARKLEY: Don took some videos of just some
5 bolts in the Skidmore.

6 CHAIRMEN COWGER: I was wondering because we
7 brought the video. How long will that take?

8 MR. BARKLEY: It's about 16, 17 minutes. We
9 could wait until later.

10 CHAIRMAN COWGER: Let's set it up and take a
11 quick look at it for the edification of the Board, so
12 we'll know a little bit more about the process.

13 MR. SULLIVAN: You'll see the procedure and
14 process in that.

15 CHAIRMAN COWGER: Let's try to cut it off before
16 we get to 16 minutes, if we can.

17 MR. CARLILE: Dave, if I could ask you a
18 question, what was the required specification? I know
19 we talked about the 39 kips tension and then later the
20 turn of the nut meant -- you addressed the 580 foot
21 pounds. Basically what was the criteria?

22 MR. SULLIVAN: Let me explain that. I'm
23 Don Sullivan, and I'm from the Norris Company. I built
24 the first East Bay bridge, there about a mile off this
25 site here. Structural steel is my background, bridges

1 and that.

2 We have always found there's a correlation
3 between the tension reading of 54,000, 55,000 once it's
4 been installed into the bridge, and that's all been --
5 it's all been correlated back to 580 foot pounds.

6 That was the testing requirement. The procedure
7 was the same procedure that we did on the East Bay
8 bridge, so the 580 foot pounds was where -- after, if
9 you read the requirement, the State has to have some
10 type of method to go back and check your bolts.

11 And the only way they can really measure after
12 the bolts has been installed with is a torque wrench.
13 When it hits at 580 foot pounds or gives that reading,
14 you can pretty much figure -- I think if you take
15 this -- there's a formula that correlates this into --
16 under ASTM and AISC, correlates this 55,000 into 580
17 foot pounds, thereabouts, plus or minus.

18 MR. BARKLEY: But you establish that in the
19 morning with a Skidmore tool. Lubrication here caused
20 a great change in that because of the changing in
21 friction. You couldn't be assured that the uniformity
22 of lubrication would be the same on every bolt.

23 MR. SULLIVAN: Explain this as it goes along.

24 MR. BARKLEY: The Skidmore is there with the
25 gauge on the top. It's a hydraulic unit, measuring

1 tension of the bolt. Then there's a torque wrench
2 with a socket on there --

3 CHAIRMAN COWGER: I was trying to get back to the
4 beginning of this video. I don't know how I got --
5 there you go. Now we'll run the video.

6 MR. SULLIVAN: Also, the Skidmore, for the
7 record, was sent out. After we started getting into
8 these problems, the Skidmore was sent out and
9 recalibrated up in Orlando, and came back with the same
10 results.

11 CHAIRMAN COWGER: Is there any sound on this?

12 MR. BARKLEY: There may be a little, but not a
13 lot.

14 CHAIRMAN COWGER: You'd just as soon not have the
15 sound?

16 I'll turn it on and you lead us through, if you
17 will, and make any comments you want to make.

18 MR. BARKLEY: Turn that up just a little and
19 we'll see.

20 CHAIRMAN COWGER: Let's go off the record for
21 this, because it's going to be impossible for the
22 reporter to record anything here, and we'll tell him
23 when to come back on and tell you when he's back on.
24 So whatever you're saying now will not be in the record
25 but we will hear it. It's kind of an educational thing

1 anyway for all of us.

2 (Discussion off the record)

3 CHAIRMAN COWGER: It's appropriate we go back on
4 the record now.

5 For the record, we just witnessed a video tape
6 showing some attempts to calibrate the torque wrench,
7 the torque inspection wrench with the lubricated bolts
8 and various other testing that you might say was done
9 in the field with the Skidmore device.

10 And also we saw a video of the structure and the
11 effort that it took to loosen and replace all the bolts
12 in the structure after the matter of how to tighten was
13 resolved.

14 Is that a pretty good summation of what was on
15 the tape? Anybody got anything else they want to add
16 to it?

17 I think now it would be appropriate for DOT to go
18 ahead and begin their rebuttal. But can I ask a couple
19 of questions before I forget to get them on the record?

20 There's been quite a bit of discussion about the
21 threads failing. Were any bolts or nuts rejected on
22 the project?

23 MR. LAIRSCEY: Only -- there were some nuts
24 brought to the job not approved for that project early
25 on. I don't know of any rejected.

1 MR. BALTER: I'm Gene Balter. I guess we need to
2 do that first. Gene Balter, with Greiner.

3 If memory serves me, I think there were a few
4 splices wherein we tried to get the bolts tightened to
5 the ultimate condition before they were lubricated.

6 And it was decided since that effort had been put
7 into them already when we realized we needed the
8 lubrication, it would not be allowed to loosen those
9 and lubricate them and retighten them and they had to
10 be replaced.

11 CHAIRMAN COWGER: My question, though, really was
12 the bolts and nuts as individual units were sampled and
13 tested before they came to the project, other than the
14 ones Mr. Lairscey just mentioned that had the wrong
15 mark on them. Was there ever any question that the
16 bolts or nuts did not meet specification requirements?

17 MR. LAIRSCEY: No. In fact we sent additional
18 ones off for additional testing with Law Engineering,
19 and all of them passed.

20 CHAIRMAN COWGER: Okay.

21 MR. LAIRSCEY: Lubbed and unlubbed.

22 CHAIRMAN COWGER: DOT, you need to go ahead and
23 rebut this thing, but I would like to stress to you,
24 I think one thing the Board wants to hear a little more
25 about is this matter of the structural steel checklist

1 that was presented to the contractor before any bolting
2 work was done, as I recall. And I want you to verify
3 is that true, and also what happened.

4 My question there is why were -- and I want you
5 to address this in your rebuttal somewhere, what is the
6 significance of requiring the bolts to be tensioned to
7 somewhere in the vicinity of 54 kips?

8 MR. LAIRSCEY: You lose tension, about 10 to 15
9 percent of bolts can lose tension within the first 24
10 hours.

11 MR. BLASEWITZ: Joe Blasewitz with DOT. The
12 reason, and this falls back into that checklist why it
13 was written as it was written. One of the primary
14 reasons, besides what Jimmy says, is you get some
15 relaxation. And that in our experience -- this
16 checklist was written for inspectors.

17 In our experience with contractors and field
18 bolting, they don't have equipment that will operate in
19 the below 10,000 range, meaning impact wrenches, so
20 therefore we went ahead and we wrote this up because
21 this is what they're going to encounter, is they're
22 going to have values above that to start with, and
23 they're going to yield somewhere in the 50,000 to
24 54,000.

25 But the reason that 10,000 or 12,000 is in there,

1 and subsequently getting that higher value, is because
2 there aren't impact wrenches that can turn 5,000 to
3 6,000 to give you the lower values. And I think that's
4 kind of an important point.

5 It's done for the contractor's benefit, because
6 any other method has got to be considered very
7 inefficient, which I think they ultimately found out,
8 when you go to lower values.

9 So that's where the 50 to 54 and the 10,000 came
10 from. Those were written for State inspectors because
11 that's what they would expect to run into.

12 CHAIRMAN COWGER: For the edification of the
13 Board, I had the opportunity to read this specification
14 on this job, and to read the bolting procedure put out
15 by the bolting council or whatever. And the
16 requirement is that the bolt in its final configuration
17 in the structure must have at least 39 kips.

18 MR. BLASEWITZ: And everyone knew that up front.

19 MR. LAIRSCEY: That's right.

20 CHAIRMAN COWGER: And the minimum in testing the
21 bolts, again before shipping to the project, the
22 minimum tension that you have got to be able to achieve
23 in the bolts was somewhere around 55,000 kips.

24 MR. BLASEWITZ: 55, 56.

25 CHAIRMAN COWGER: Okay. Did you all have

1 something you wanted to say before they start?

2 MR. SULLIVAN: Yeah, Dave wasn't there when this
3 was handed out. I would like to go on the record as
4 saying the first two splices set in the first two
5 bridge girders that were put together, I believe, were
6 on the northwest end of the structure.

7 We ran this whole test, those bolts, we ran the
8 five bolts and threw out the high and low, and came up
9 with an average. We put those first two splices in
10 with no problems whatsoever.

11 Those were the two splices that were left in. We
12 didn't pull the bolts off and relubricate or do
13 anything to them.

14 CHAIRMAN COWGER: Was that done after this
15 meeting where the procedure was presented?

16 MR. SULLIVAN: Yeah.

17 CHAIRMAN COWGER: Apparently this procedure was
18 presented before you tightened any bolts?

19 MR. SULLIVAN: Yes, sir.

20 CHAIRMAN COWGER: Explain to the Board why that
21 happened. Do you know?

22 MR. SULLIVAN: Well, I don't know. I can't
23 physically explain it except that we put the bolts and
24 nuts in, and Greiner and everybody was there when we
25 run the test. It is the procedure to have someone

1 there witness it before we start out that day.

2 As long as you don't shut the air compressor off
3 or demobilize the air guns and that, then that test is
4 good for the whole day. Once you shut the air
5 compressor off, then you have to start all over again.

6 But we opened up the buckets of bolts, they were
7 approved to spec and so forth and so on, and we put
8 them in there and they worked.

9 MR. BARKLEY: We established the bolts snug on
10 the ground, shooting for the 50 to 54,000 every
11 morning. And item 5 for tightening says, "If below
12 50,000 repeat steps one through 4, except turn the
13 small gun up to 15,000 pounds." If you're above 54
14 come down, but below 50 was unacceptable according to
15 these procedures given to start this job.

16 CHAIRMAN COWGER: Wait, now, we're arguing back
17 and forth across the table. We're going to stop on the
18 contractor's side. We've not let DOT present anything
19 at all, so it's time to do that.

20 MR. LAIRSCEY: Jim Lairscey with the DOT.

21 Basically, Gene, we don't have a lot of quarrel
22 with the facts of what the contractor has presented.
23 Basically he went pretty much through what did happen
24 there, and we agree with everything that did happen.

25 The thing we want to point out about the

1 procedure that was given them, as he pointed out, was
2 the same procedure that was used on East Bay, and it
3 worked perfectly. We achieved tension on East Bay of
4 above 39,000 pounds on all the bolts, measurable
5 tension.

6 And everyone, us and the contractor, fully
7 assumed we would on this job just using the same type
8 bolts, same size and everything, just from perhaps a
9 different manufacturer or supplier.

10 The problem was -- and we even -- as he
11 mentioned, we put up two splices using the very same
12 system, and everything was okay. And the -- but the
13 contractor did find out that in the Skidmore, when he
14 put it to 10,000 pounds, he could not get a third of a
15 turn and the Skidmore would not read tension of a
16 minimum of 39,000 foot pounds, and it was not
17 acceptable.

18 Now the DOT at this point -- we made an error at
19 this point. This was an error on our part in an
20 attempt to try to keep the job going. We knew that the
21 only thing the DOT can accept is a third of a turn,
22 which gives you theoretically 39,000 PSI. And so we
23 was getting tremendous torque, 580 foot pounds, but we
24 was not getting on the Skidmore the tension required.

25 So for about two or three days, I think two

1 actually, the contractor did put up bolts knowing that
2 he was not getting tension, that he probably would not
3 achieve final tension but would get 580 foot pounds and
4 we would accept it.

5 Fortunately, very fortunately we realized our
6 error, and we did it by one way. We brought some bolts
7 down that was used on the other job and that had no
8 problem. We could put them in there and get our
9 one-third and we had 55,000 foot pounds.

10 So we said hey, there's something wrong here with
11 the bolts or something. So the problem at that time
12 was -- as we went on we found out that the only way
13 you're going to get it is to lubricate them.

14 The House of Threads immediately said -- they're
15 the one that supplied the bolts -- they immediately
16 said lubricate them and you'll have no problem, which
17 was true. We found out that was true.

18 The problem with the contractor was he had
19 90 percent of the bolts in the air. All this was going
20 along and he was continuing to put bolts and snugging
21 them. But he had 90 percent of the bolts, probably, in
22 the -- up in the air and them being snugged.

23 The only solution was, no matter what he put on
24 them, no matter how much torque he put on the bolt from
25 then on, it would not increase tension because it was

1 not stretching the bolt. It was not applying any
2 tension to it. Therefore we could not accept it.

3 As I say, it's lucky we found this out. The
4 whole bridge could have been installed with no tension
5 in the bolts.

6 So the only solution is to back off the nuts he
7 had in the air, lubricate them and then it was very
8 easy to get tension then. You could snug them, and it
9 didn't really matter -- you could snug them to around
10 6,000 PSI and with relative ease achieve tension of
11 above 39,000 foot pounds.

12 Of course as I say this was a very difficult job
13 for him to go do, and we worked -- as he said, we had
14 many meetings. We tested the bolts. We were
15 concerned -- at this point, I was concerned.

16 And this is why we brought so many people into
17 it, was because you could strip the nut as a failure
18 rather than what we had saw in the past with a bolt
19 that wasn't lubricated. The bolt would usually snap in
20 two in the thread area.

21 The threads wouldn't strip but the threads would
22 snap off, and we wasn't finding that situation. We
23 were finding actually the nut stripping off. But it
24 was beyond the failure point. It didn't strip before
25 required tension, but it would happen.

1 In other words, somebody could go up there and
2 turn more than a third, not watching what he was doing,
3 and he could actually strip the bolt. We found this
4 out.

5 So this concerned us initially, and we did do a
6 lot of testing. We did look into it. We had them
7 tested and we were assured this is no problem.

8 And so the contractor had to -- he had no
9 choice -- to built the job according to specifications,
10 and we never changed the specifications. The
11 requirement was for him to get 39,000 pounds tension
12 and we was to measure it by one-third of the
13 turn-of-the-nut method.

14 And that has never been changed. That method
15 that Joe gave them did not change from that or any
16 other method. The procedure was never changed. Excuse
17 me. The method of achieving it can be any way the
18 contractor and the DOT can decide upon, which is easier
19 for -- inspecting bolts is a very hard job.

20 The only way you assure yourself of getting a
21 third of a turn is to mark the bolts in the field and
22 look at the every one of them as you turn it.

23 So you can use -- by using the Skidmore you can
24 determine what torque you need, and that gives you sort
25 of a correlation by arbitration method of what you're

1 receiving in the field. And the inspector can sort of
2 check some by that way, if he has questions on them.

3 So the problem is, the DOT does not feel like --
4 we did not supply the bolts. It's the contractors
5 responsibility to supply the bolts. Granted the
6 contractor did not know how they was going to react and
7 we did not know.

8 But we did everything we possibly could to try to
9 help him. We changed our method, even though we
10 couldn't change the procedure, the final what we had to
11 do, the specification procedure. We did change the
12 method. We worked with them.

13 Another thing I'd like to point out, when he
14 backed them off -- and he said he had them up very
15 tight and backed them off and lubricated them to get
16 them to where -- he made a comment where he did no
17 longer have to get them to 55,000, he could go to 39 or
18 44, so we did back off, but it was not -- it was no
19 harder.

20 I mean, the big problem was having to back them
21 off. Actually going to 44 was easier for him than
22 going to 55. It made it simpler, less effort put
23 forth.

24 But we felt like at 44 we were still above the 10
25 to 15 percent loss you get in relaxation over the first

1 24 hours that the specs indicate.

2 CHAIRMAN COWGER: Let me stop and ask you. How
3 you ultimately get to 44 is you sort of play around
4 with the Skidmore to accomplish this? You put the bolt
5 in the Skidmore, you snug it up to a certain value,
6 then you turn it a third of a turn and read. If your
7 at 44, you're right?

8 MR. LAIRSCEY: Right.

9 CHAIRMAN COWGER: If you're below 44 you have to
10 increase your snug value; if you're above 44 you have
11 to decrease your snug value?

12 MR. LAIRSCEY: Yeah.

13 CHAIRMAN COWGER: And the snug value really is
14 determined by torquing, right?

15 MR. LAIRSCEY: Right.

16 CHAIRMAN COWGER: You have to relate what your
17 snug value is, whether it be five or ten kips, whatever
18 that number is, you have to relate that to a torque
19 value that you use in snugging the bolts?

20 MR. BARKLEY: Right. You have to find some
21 method that is consistent that --

22 MR. LAIRSCEY: Something that you can use.

23 CHAIRMAN COWGER: What you're trying to do is
24 determine --

25 MR. LAIRSCEY: What it takes to get one-third.

1 CHAIRMAN COWGER: -- what it takes to get the
2 bolt to a snug condition?

3 MR. BLASEWITZ: Ideally you can get that with an
4 impact wrench. But when you get down to low values you
5 can't do that. That's something to keep in mind.
6 That's why they go to a spud wrench or a torque wrench.

7 MR. LAIRSCEY: These bolts lubricated did tighten
8 up easier than any bolts which we've encountered. But
9 we have on two or three projects lubricated, and
10 usually you use WD-40, not a wax. This was a wax. The
11 contractor did not want to use WD-40. He thought it
12 would be a little harder to clean them off.

13 CHAIRMAN COWGER: Before you could paint them?

14 MR. LAIRSCEY: Before you could paint it, that's
15 correct.

16 CHAIRMAN COWGER: When they finally got into
17 doing the work and were able to proceed, how did they
18 snug the bolts in the field then? What kind of
19 equipment did they use?

20 MR. BARKLEY: Torque wrench.

21 MR. BLASEWITZ: Used a torque wrench. Then they
22 verified the torque value in the Skidmore. Used a
23 small torque wrench. What was it, 70 pounds?

24 MR. BARKLEY: 70. We had to establish that every
25 morning.

1 CHAIRMAN COWGER: Was this a hand torque wrench,
2 not an air or hydraulic?

3 MR. LAIRSCEY: We found out once they were
4 lubricated, if you put the air gun on it you could
5 strip them.

6 CHAIRMAN COWGER: Then there was no way to set
7 the air gun low enough to snug the bolts?

8 Mr. BLASEWITZ: That's right. So they had to go
9 to the inefficient method not to use the torque wrench.

10 CHAIRMAN COWGER: I know I'm interrupting a lot,
11 but I think I'm getting out the points that we need to
12 know. You mentioned the East Bay job. Lubrication on
13 those bolts, was it applied at the job or did it
14 come --

15 MR. LAIRSCEY: No, the bolts can come lubricated
16 or nonlubricated.

17 CHAIRMAN COWGER: And it's common for them to
18 come either way?

19 MR. LAIRSCEY: I would say probably the way you
20 mostly would get them, they would be prelubricated,
21 most of them I have saw on bridges.

22 CHAIRMAN COWGER: Now, Mulberry did the bolting
23 on both of the bridges?

24 MR. SULLIVAN: We did three bridges, one in
25 Daytona the same way.

1 MR. BLASEWITZ: One of the problems is you can't
2 see the lubricant, either.

3 MR. LAIRSCEY: No, you really can't tell by
4 visual or feel on the lubrication, or at least
5 I haven't been able to tell the difference.

6 CHAIRMAN COWGER: This is one of the bolts that
7 I have in my hand that was used, right?

8 MR. LAIRSCEY: That's right.

9 MR. SULLIVAN: You can't feel it, you can't see
10 it, you can't taste it. Basically you don't know if
11 it's lubricated or not.

12 CHAIRMAN COWGER: We agree to that, right?

13 MR. SULLIVAN: Yes, sir.

14 CHAIRMAN COWGER: Okay.

15 MR. BARKLEY: And there's the rotational capacity
16 test required on those by the supplier of the material.

17 MR. LAIRSCEY: One other thing, Gene. I don't
18 want to go through too much, just hit a few little
19 things. You know, we never prohibited the contractor
20 from exploring any alternate methods or anything that
21 he wanted to use, as long as he achieved turn of the
22 nut. That's what the specification required, that he
23 get the tension by turn of the nut.

24 There was some other things that delayed the job,
25 to get into -- there was other problems that is minor,

1 relatively, because we hit on obviously what was the
2 main problem.

3 He had the bolts up there, and he had to loosen
4 them. He did have some nonapproved nuts earlier on the
5 job that was used, and we had to take them out. That
6 caused some delays.

7 Also, there was a lot of problems with the
8 splices. Sometimes the splice plates come out, and you
9 can't use a drift pin to align the holes, and he had to
10 send some of the splice plates -- I think at least one
11 back twice to be refabricated before it could be
12 successfully placed.

13 At one time he ran out of fasteners. And also,
14 the thing is, several times he states he was stopped
15 from working by Greiner. Obviously if we cannot
16 achieve tension, we did have to say you've got to stop,
17 you've got to do a different method. You can't
18 complete the bridge unless we get tension in them.

19 There was time when we, I think it was mutually
20 agreed to, hey, let's look at this thing, because we
21 were concerned and we was working, and this
22 subcontractor works very well with us. He was
23 concerned and we was all concerned.

24 But the whole time it was, we would work and do
25 everything we can, but the bolt problem is a

1 contractor's problem. That's not our problem. We do
2 everything we can, we'll work, we'll try to solve it,
3 we'll bring people in, anybody you want to. But we
4 just could not -- you know, it's not the DOT's
5 responsibility on some problem like this.

6 So I think that Gene here, I think Gene has a few
7 things. Gene was the resident on the job, and there
8 might have been a few things I might have missed or he
9 might want to make a point on.

10 MR. BALTER: I have a couple of comments I'd like
11 to make. I think they may be applicable to what we're
12 talking about.

13 First of all, with regards to the meeting on
14 July 7th, when we initially sat down with the
15 contractor and this procedure was discussed to get the
16 turn-of-the-nut method, one of the things I want to
17 make sure everybody understands, in doing bolting
18 there's a lot of variables in there. There's the
19 different types of equipment to use, how to achieve
20 your snug condition and everything else.

21 So I called that meeting because I wanted to make
22 sure everybody knew how we were going to bolt this
23 bridge up and that everybody agreed with how it was
24 going to be done. We gave the contractor the
25 opportunity to say I want to do this or I want to do

1 that, whatever.

2 This procedure that was provided was what was
3 used on the East Bay bridge, and I think everybody
4 would agree that would be a good place to start since
5 it's -- obviously it worked a mile up the road, so
6 let's try it on this bridge. And as the contractor
7 said, nobody took exception to that.

8 The one thing I do want to point out, where it
9 says in there that you want to turn the bolts to 52 to
10 54,000 pounds, that is not a contractual requirement.
11 The specifications clearly say he has to achieve a
12 minimum of 39 kips. Not only would we require him to
13 do any more, but we could not unless we had a change to
14 the contract which was never even discussed.

15 All that was done, as Mr. Blasewitz has said, was
16 we used that higher value because we felt like -- and
17 I think the contractor would agree -- that typically
18 that usually satisfies the equipment that he wants to
19 use to achieve the tightening of the fasteners.

20 And in case in anybody's mind they think that's
21 an awful high value, why did you start that way?
22 I think it's worth noting the specification for the
23 nuts and bolts is 60,000 kips of tension before they
24 fail, individually.

25 There is no specification on how they act as a

1 component, and I think that's why we're seeing a
2 problem here is individually the nut or bolt would
3 achieve 60,000 kips before failure. But when you put
4 them together, particularly when lubricated, they would
5 fail together sometime sooner.

6 The second thing I'd like to discuss is the two
7 days we had in there where we were using the 580 foot
8 pounds of torque to try and accept the fastening of the
9 nuts and bolts. As Jimmy said, we probably made a
10 mistake there. We should not have done that.

11 I think it's important to point out the
12 contractor was the one that introduced this
13 torque-tension relationship, and I think had requested
14 that we consider using a torque value instead of
15 tension.

16 That was wrong. That was a mistake. We should
17 never have done that. I don't think the Department
18 would take any exception if the contractor wanted to be
19 paid for those two days while we were probably using
20 that incorrect method.

21 Just a comment to something that Dave Barkley had
22 said when he was talking about Charlie Jones. He had
23 said that Charlie said lubrication was not normal for
24 bolts.

25 I don't think that's exactly what Charlie said.

1 I think Charlie said it's not uncommon for lubrication
2 to be used on bolts, and he's aware of jobs they've
3 done it on in the past.

4 I think probably we have not ever said on the
5 record, we might have discussed it when the tape was
6 off, the fact that the contractor was very concerned
7 that the lubricated bolts could be hand loosened. That
8 is correct.

9 Immediately after you tighten those bolts and got
10 them to their ultimate condition, you could then
11 immediately go back and take that 12-foot spud wrench
12 with one man and take them off.

13 MR. SULLIVAN: 12 inch.

14 MR. BALTER: What did I say?

15 MR. SULLIVAN: 12 foot.

16 MR. BALTER: You could use that, and take that
17 off. We had a concern about that, too. But it's
18 probably a matter of days to one week -- if you go
19 back, whether through evaporation or some type of
20 dissipation process, that lubricant is gone.

21 And we put three and four guys on a cheater bar
22 to try and take those bolts off -- Greiner did not have
23 any air equipment to try and back them off -- but there
24 was no way they could take those nuts and bolts off.

25 As Mr. Lairscey said, we tried that on many of them.

1 I think maybe the last comment that I want to
2 make here -- and it is something I do in my own mind to
3 try and equate what type of problem we're looking at
4 here, and I relate it to maybe another type work
5 everybody is more familiar with -- I use an analogy of
6 asphalt paving.

7 If I have an asphalt paving contractor on a job
8 putting down asphalt supplied by ABC Asphalt
9 Manufacturing Company, and you establish a rolling
10 procedure on the job and you get great density testing
11 results. And you can do this on two, three, four,
12 five, 15 jobs, and everything goes wonderful.

13 And then all of a sudden you get to the 20th job,
14 but you're getting your asphalt supplied by a different
15 manufacturer. You use your same old rolling pattern,
16 and gee, you don't get your density. And you say
17 there's something wrong with the asphalt. There's a
18 problem here, but it's not my fault.

19 Well, that's not necessarily true. He could be
20 using different aggregate. There could be lots of
21 different variables, asphalt contents or whatever. But
22 if he hasn't experienced it before, it's going to
23 create problems for him. And I don't think that's the
24 owner's problem.

25 I think it's the responsibility of the contractor

1 to figure out where those differences or what different
2 procedures need to be used to make that work.

3 And I think that's what we've seen here. Both
4 Dave and Don have said they never had through their
5 experience to lubricate bolts before. Well, it's done.
6 It's done throughout the State. And I'm sure they
7 won't have this same kind of problem the next job they
8 see this on.

9 CHAIRMAN COWGER: Let me make a comment. It
10 appears to me like once it was determined that the
11 bolts were going to be lubricated in the field and a
12 method set to lubricate the bolts, that you no longer
13 had a problem?

14 MR. LAIRSCEY: Right.

15 MR. BALTER: Once we decided that we were going
16 to lubricate, then we all had to realize, hey, we
17 cannot be going for this 52 to 54 kips of tension, we
18 better back that off. But other than that, yes, that's
19 correct, there was no problem from that point on.

20 MR. BLASEWITZ: But it required that all the
21 bolts that had already been installed in a snug
22 condition at 10,000, which was now too high, had to be
23 backed off -- the nuts had to be backed off, lubricated
24 and then resnugged to a lower value. And that 10,000
25 was -- most of them were put up knowing that there was

1 a problem going -- getting the minimum requirement.

2 MR. LAIRSCEY: They continued to put them on up.

3 CHAIRMAN COWGER: We heard that in the earlier
4 testimony.

5 Okay. Does the contractor -- that about wraps it
6 up here. What might you have to say, anything further?

7 MR. BARKLEY: The nonapproved nuts mentioned
8 earlier were manufactured -- were brought down from the
9 East Bay job. I'm not sure we got them down there.
10 I know --

11 CHAIRMAN COWGER: I don't think that's pertinent
12 in this dispute, though, the nuts.

13 MR. BLASEWITZ: I just have one thing I'd like to
14 add. This three-page part of it that's being referred
15 to as a procedure, it was never in my mind intended as
16 a procedure.

17 As I said, it's a checklist given to inspectors.
18 And if you read the first item, it says when steel
19 arrives on the job, check the prime coat. This thing
20 really is for an inspector working with structural
21 steel, what he can look for and expect to see, and what
22 he needs to do.

23 It's not intended as a procedure. Everyone here
24 knows the procedure is the ASTM, and this is not --
25 should not be construed as a procedure.

1 CHAIRMAN COWGER: I think the Board understands
2 that point, then. You've made it very well.

3 I have one question about the compensation part
4 of the claim. In Exhibit No. 1, there's a letter, back
5 about ten or so pages, dated October the 23rd, in which
6 Mulberry Construction sets out the amount of their
7 claim or their portion of the claim, \$46,423.86.

8 I want to know how you arrived at those hours,
9 iron workers 1159 hours, et cetera. What is the basis
10 for those? I don't then want a real detailed
11 explanation, just what do those hours consist of?

12 MR. BARKLEY: It was from having to go back and
13 loosen the previously snugged bolts, lubricate and
14 resnug at a lower value, and then final torque.

15 And the equipment that it took to get some of the
16 splices in position rather than on the ground, where
17 they were originally.

18 MR. SULLIVAN: And the work stoppages in between,
19 we would work a day using the procedure or whatever
20 technique we were going to utilize, we would have to
21 take off a day, send everybody home, bring the guys
22 back in. We did that a couple times.

23 I'd like the record to show that we installed
24 this particular bridge -- we were two days earlier in
25 installing the erection portion of it. We were two

1 days ahead of the previous schedule even on the East
2 Bay bridge, with the expenditure of hours almost about
3 basically the same, except for these backing and
4 putting the bolts and nuts back in.

5 The process of taking them back out and
6 lubricating them is probably -- we sort of timed it 30
7 to 40 percent longer due to the fact that you have to
8 be on a scaffold, now, to go back to the ones already
9 up in the air.

10 CHAIRMAN COWGER: My question, though -- let's be
11 a little more specific. Iron workers 1,159 hours. Is
12 there anywhere in the documentation that the Board can
13 go to find out how you arrived at those hours?

14 MR. BARKLEY: We tracked it through our certified
15 payroll on job 89001-5.

16 CHAIRMAN COWGER: You mean you set up a separate
17 account number for this?

18 MR. BARKLEY: Yes, we set up a separate job
19 number for this, what we call a separate job number.

20 CHAIRMAN COWGER: And you accumulated hours that
21 you felt were claim hours or extra hours against that
22 account number?

23 MR. SULLIVAN: Yes, sir.

24 CHAIRMAN COWGER: Mr. Lairscey?

25 MR. LAIRSCEY: I just want to verify. I did not

1 understand -- I have -- I wondered where the 1159 came
2 from, and the payrolls I get is the total time they
3 spent from 7-17 until 10-1. That was the 1159.

4 MR. BARKLEY: That's just on that splice job. We
5 set up a dash number when we feel it's outside our
6 scope of work or an extra or whatever.

7 MR. LAIRSCEY: That's why I wanted to verify,
8 because I knew -- I came up with the same hours, but
9 I didn't know if there was a separate job.

10 MR. SULLIVAN: We broke it out, and then quit
11 using the dash number once we had a third of a turn.
12 Then we went back on our original job number to do
13 that, didn't we?

14 MR. BARKLEY: Right.

15 MR. SULLIVAN: Because that was still our scope
16 of work. All we're looking for is pulling the bolts
17 back off, reestablishing the lower tension readings,
18 the lubrication, and the time it took to do that.

19 CHAIRMAN COWGER: That job number you assigned
20 was 89-001005?

21 MR. SULLIVAN: That's correct.

22 CHAIRMAN COWGER: So these payrolls that I see
23 back here, if I went through and summed them all up,
24 I'd get the number of hours for iron workers that you
25 show in this letter?

1 MR. SULLIVAN: Yes, sir.

2 MR. LAIRSCEY: That's correct. I verified that.

3 MR. BARKLEY: Our base job was 89-001. And
4 compared to the project at East Bay, we only spent 94
5 percent of the man hours. We felt that was due to the
6 learning curve, that those two jobs were almost
7 identical.

8 MR. SULLIVAN: Same amount of pieces, basically
9 same amount of bolts, and we were two days ahead on the
10 erection process of this job than what we were at East
11 Bay.

12 And we did that after we ran the 005 job number,
13 the 001. That's how we checked ourselves, and this was
14 after the process. We went back then, and pulled the
15 other job cost history on the East Bay bridge, and it
16 correlated. It made sense.

17 CHAIRMAN COWGER: I think the Board has enough
18 information now, unless somebody has got something that
19 they just really have to get out.

20 MR. LAIRSCEY: Well, Gene, the only thing I want
21 to mention, in my exhibit I did mention that we did
22 attempt -- we met several times trying to settle this.

23 CHAIRMAN COWGER: We'll read the exhibits.
24 That's the reason -- I don't think it's necessary to go
25 into that because you have gone into a good explanation

1 in your attempts to settle the claim, unless you want
2 to add to what is in the exhibit.

3 MR. LAIRSCEY: The only thing, I did make a
4 mistake, and I don't know where I came up on the delay
5 dates, where I have the July 17, July 23. I don't know
6 where I get 396 hours. I picked it up somewhere, but
7 I can't find out where I did it.

8 Actually that is only 25 hours on their payroll,
9 and I don't know where I got that, which would have
10 reduced my offer down to around \$12,000.

11 And the other thing we didn't point out, that we
12 have completely -- we haven't mentioned yet which is
13 mentioned in mine but they didn't mention it, was
14 overhead cost to Danis for 16 days, and it's in the
15 exhibit.

16 And we'd like to point out that the bridge, the
17 concrete had been poured, the bridge was completed
18 almost two months prior to the bridge opening, and
19 limerock -- and the last limerock and asphalt being
20 laid against it.

21 So therefore, even though obviously bolt
22 tightening can be a critical path item, and it might
23 have been at the time it's being done theoretically,
24 but if a bridge is completed two months before you can
25 put traffic on it, then it no longer is a critical path

1 item. It's off the critical path. Because what was
2 your critical path truly was limerock operation and
3 asphalt.

4 CHAIRMAN COWGER: Let me sum up what he's saying
5 and I'll give you all a chance to comment on it.

6 I think -- and correct me if I'm wrong -- what
7 he's saying is the bolt tightening was on the critical
8 path on the bridge, but not on the critical path of the
9 overall project.

10 MR. LAIRSCEY: Right.

11 MR. COLLINS: Bruce Collins, with Danis. It
12 definitely was the controlling item at that point.
13 This was the last of two bridges on this project, and
14 if you'll read the daily reports, Danis was literally
15 doing nothing on the bridge.

16 We were waiting to pour this deck, and we waited
17 16 days. We had a lot of work do. True, it did end up
18 two months ahead of the road work, and it's not really
19 relevant but we had other outstanding circumstances.

20 And also to go on the record, we have a claim --
21 and this is also into Jimmy's office right now -- for
22 the same 16 days. It's part of a larger overall delay,
23 and wherever -- we are going to recoup the
24 compensation. If we win here, his will be reduced, and
25 vice versa.

1 CHAIRMAN COWGER: I would just as soon not heard
2 that.

3 MR. BALTER: I have a question on that statement.
4 How can you ask for extended overhead for the prime
5 contractor of the job when -- if this had never
6 occurred, and this bridge had been done theoretically
7 16 days sooner, there's still two and a half months
8 before you can open this bridge to traffic.

9 This cannot have caused the prime contractor --
10 this problem here, not anything else but this problem
11 here could not have caused the prime contractor 16 days
12 in extended overhead.

13 CHAIRMAN COWGER: Could it have cost him
14 anything?

15 MR. COLLINS: That's my question -- or job site
16 overhead. How about job site overhead?

17 MR. BALTER: You're out there anyway. You're
18 contractually obligated to have a superintendent on the
19 job.

20 MR. LAIRSCEY: If your crews were sitting around
21 doing nothing, it conceivably could. It's according to
22 how you operate, or if you have somewhere else to send
23 your people.

24 MR. SULLIVAN: I guess at this point we should
25 have in overhead delayed crew time.

1 CHAIRMAN COWGER: I think the Board has heard
2 enough. Mr. Carlile, do you have any questions?

3 MR. SULLIVAN: I'd like to add one small thing.
4 The delays as far as the misalignment of the splice
5 plates and all that are not part of Mulberry's claim on
6 the -5. All the other holdups were broken out on our
7 time sheets and they're related back to the original
8 purchase order, the original job number. So we're not
9 asking for anything but the bolt hardware.

10 MR. LAIRSCEY: Let me ask one thing in relation
11 to that as a final thing.

12 Gene, was you ever informed that they were
13 keeping separate time sheets at that time, so you could
14 check on what they were doing?

15 MR. BALTER: No, sir.

16 MR. LAIRSCEY: That's the problem. We can't
17 verify that, Gene.

18 MR. BALTER: As a matter of fact, our records
19 show activities not associated with this problem only
20 being done on days they're asking for time for. Maybe
21 we missed something.

22 MR. LAIRSCEY: We do admit they were loosening
23 bolts, we know all that. But as I say, we were not
24 informed where we could verify all the records as it
25 was going on.

1 MR. SULLIVAN: Nobody asked.

2 CHAIRMAN COWGER: We understand that. And
3 I think there's enough testimony. Mr. Carlile, do you
4 have any questions?

5 MR. CARLILE: Just a quicky. Did you all have
6 trouble with the bolts from the beginning?

7 MR. SULLIVAN: No, sir.

8 MR. CARLILE: It was working for a while, and
9 then lo and behold --

10 MR. LAIRSCEY: See, the bolts was not supplied by
11 you, right, but by Danis.

12 MR. SULLIVAN: That's correct.

13 MR. LAIRSCEY: So Danis had different types of
14 bolts. He brought in some from the other job and those
15 might have been the ones that worked.

16 CHAIRMAN COWGER: Is there a possibility that the
17 bolts that were put in the first two joints where he
18 had no problem were lubricated?

19 MR. LAIRSCEY: It almost had to be, Gene, because
20 we never could get that type again.

21 CHAIRMAN COWGER: Prelubricated.

22 MR. LAIRSCEY: Right.

23 MR. BALTER: Just a hypothesis, possibly those
24 bolts were lubricated when they were manufactured, but
25 after a short period of time they got the first ones in

1 with no problem, and then later on it became a problem.

2 MR. SULLIVAN: May I ask a question? Are these
3 bolts being utilized by the State on the new bridge
4 that's going up?

5 MR. LAIRSCEY: I don't have any other bridges
6 being constructed right now, so I don't know.

7 MR. SULLIVAN: Is this specified in the new
8 bridges forthcoming?

9 MR. LAIRSCEY: I have no idea.

10 MR. BARKLEY: I believe they told me rotational
11 capacity tests are now required for the bolting unit by
12 the supplier before they hit the job site --

13 MR. LAIRSCEY: Well --

14 MR. BARKLEY: -- rather than individually just
15 test them, because they're good at 60,000 each on this
16 job, but as Gene stated -- and they failed at 55 when
17 they put them together as the application designed.

18 CHAIRMAN COWGER: What I'm understanding is that
19 there's a new test been interjected that requires the
20 bolt and nut to be tested as a unit?

21 MR. BARKLEY: Before brought to the job site.

22 CHAIRMAN COWGER: You mentioned rotational
23 capacity. I think it's for tension, isn't it?

24 MR. BARKLEY: Yeah, right.

25 MR. LAIRSCEY: Now, these did pass that test. We

1 had Law test it for that, and these all passed.

2 CHAIRMAN COWGER: But that's strictly a tension
3 test to be sure that the bolt and nut functioning
4 together can meet the specification tension
5 requirement.

6 MR. LAIRSCEY: See, these nuts and bolts are not
7 made by the same manufacturer.

8 CHAIRMAN COWGER: Can you tell me that's the
9 truth, what I just said?

10 MR. BARKLEY: Say it one more time.

11 CHAIRMAN COWGER: That you now require, DOT now
12 requires, and on this job and on this job you did test
13 some, where you took the unit of the bolt and the nut
14 and tested it in tension, to see that the unit itself
15 would meet the minimum tension requirements.

16 MR. LAIRSCEY: I have never heard of that, have
17 you? We have no information on that, Gene.

18 MR. SULLIVAN: I can tell you Law Engineering
19 took the bolts to Gene Balter's office, and on the
20 speakerphone told us that he ran into the same types of
21 problems that we were running into in the field with
22 that lubrication being added on there.

23 Again, you've got the bolt in your hand. You
24 tell me whether that one is lubricated or not. If
25 I had a Skidmore here today you couldn't tell me.

1 CHAIRMAN COWGER: We established that you can't
2 tell that.

3 Mr. Carlile, did you you have another question?

4 MR. CARLILE: The point I was trying to make, we
5 don't know exactly what may have been the problem
6 initially. We just know the lubricant solved the
7 problem.

8 MR. LAIRSCEY: Yes.

9 MR. SULLIVAN: It solved the problem at a lower
10 tension reading, yes, sir.

11 CHAIRMAN COWGER: Mr. Turnbull, do you have any
12 questions?

13 MR. TURNBULL: None.

14 CHAIRMAN COWGER: Okay. This hearing is hereby
15 closed. The Board will met sometime during the month
16 of October, we're not sure yet when, to deliberate this
17 claim, and you'll have our order shortly thereafter.
18 (Whereupon, the hearing was concluded at 12:45 p.m.)

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CERTIFICATE OF REPORTER

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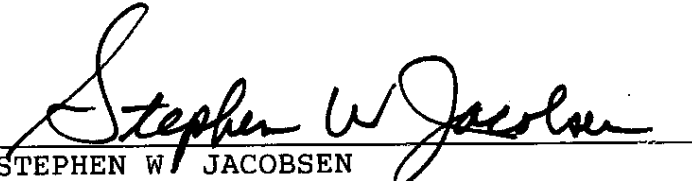
STATE OF FLORIDA)
COUNTY OF LEON)

I, STEPHEN W. JACOBSEN, Certified Shorthand Reporter
and Notary Public in and for the State of Florida at Large:

DO HEREBY CERTIFY that the foregoing proceedings were
taken before me at the time and place therein designated;
that my shorthand notes were thereafter reduced to
typewriting under my supervision; and the foregoing pages
numbered 1 through 51 are a true and correct record of the
aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee,
attorney or counsel of any of the parties, nor relative or
employee of such attorney or counsel, nor financially
interested in the foregoing action.

WITNESS MY HAND AND SEAL this, the 29th day of September,
A.D., 1990, IN THE CITY OF TALLAHASSEE, COUNTY OF LEON,
STATE OF FLORIDA.


STEPHEN W. JACOBSEN
CSR, RPR, CP
Post Office Box 13461
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My Commission Expires March 25, 1991