

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of: *

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ROGER BLOUGH CASUALTY *

IN STURGEON BAY, WISCONSIN, * Accident No.: DCA21FM015

ON FEBRUARY 1, 2021 *

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Interview of: MICHAEL SHAYDA, Tech Service Manager
Carlin Combustion Technologies

Via telephone

Tuesday,
September 21, 2021

APPEARANCES:

CWO [REDACTED], Lead Investigator
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I N T E R V I E W

1
2 CWO [REDACTED]: All right, that sounds great. Well, again, my
3 name is [REDACTED], I'm a chief warrant officer with the U.S. Coast
4 Guard and I'm the lead investigator for the *Roger Blough* fire that
5 occurred on 1 February.

6 Today we're going to do an interview with Mike with Carlin
7 Combustion and what I'd like to do is just go around the -- well,
8 the room so to speak and have everybody introduce yourself, spell
9 your first and last name, and who you represent or who you are
10 with.

11 If we could start with Mike, I don't have your info. Could
12 you spell your first and last name?

13 MR. SHAYDA: It's Mike Shayda, it's M-I-K-E or M-I-C-H-A-E-L,
14 Shayda, S-H-A-Y-D-A, I'm with Carlin Combustion.

15 CWO [REDACTED]: Okay.

16 John, could you go ahead and introduce yourself, sir?

17 MR. FELDBRUEGGE: Sure, yeah, my name is John Feldbruegge, F-
18 E-L-D-B-R-U-E-G-G-E, I guess my formal legal name is Jonathan.
19 I'm an attorney at Litchfield Cavo, we represent Carlin
20 Combustion.

21 CWO [REDACTED]: Scott, would you mind going?

22 MR. STEPHENSON: Not a problem, Scott Stephenson, S-T-E-P-H-
23 E-N-S-O-N. I am also with Litchfield Cavo and represent Carlin
24 Combustion.

25 CWO [REDACTED]: Thanks, Scott.

1 Captain Flaherty, would you mind?

2 CAPT FLAHERTY: Sure, no problem. First name is -- my name
3 is David Flaherty, first name is spelled D-A-V-I-D, last name is
4 spelled F-L-A-H-E-R-T-Y, and I'm the investigator in charge for
5 the NTSB.

6 CWO [REDACTED]: Who'd I forget?

7 Mr. Apelis, sir?

8 MR. APELIS: Good morning, Markus Apelis of Gallagher Sharp,
9 A-P-E-L-I-S, counsel for vessel owners.

10 CWO [REDACTED]: Thank you, Markus.

11 Am I missing anyone else?

12 Okay, that being said, Ms. Yoho, would you mind spelling your
13 first and last name?

14 MS. YOHO: Katherine Yoho, K-A-T-H-E-R-I-N-E Y-O-H-O.

15 CWO [REDACTED]: Thank you, ma'am.

16 So, now that we have everybody here and kind of --
17 introductions are out of the way, I know we've done a few of these
18 so far, but Mr. Shayda, you're new to this investigation, at least
19 for me. I know you've been working with John over the last week
20 or so kind of prepping for this. Just to give you a little
21 insight, so the Coast Guard and NTSB are interested into -- the
22 cause of the fire on the *Roger Blough* on the 1st of February this
23 year and we're trying to glean any information or facts that could
24 help us identify causative factors.

25 For the Coast Guard, we don't assign blame. What we're

1 looking for and our main objective here is to try to figure out
2 what happened so that we can prevent future occurrences. And the
3 reason for speaking with you today is to hopefully get some
4 insight from you based on your experience and your position with
5 Carlin on what you think you see in some photographs here
6 regarding the burner assembly for the furnace. So, the *Roger*
7 *Blough* has a large burner furnace and my understand and what I've
8 come to discover is it appears that burner assembly sustained some
9 type of failure.

10 So, with that said, does everyone have the PDF that I sent
11 out? Do they have that open where they can see it?

12 Mike, do you have that too?

13 MR. SHAYDA: I have it.

14 INTERVIEW OF MICHAEL SHAYDA

15 BY MR. [REDACTED]:

16 Q. Okay, great. So, we'll just go to the very first page where
17 it just says burner furnace and I'll -- we'll click through that
18 together here in a moment. But what I'd like to do is get a
19 little more information from you, Mike, and get some job history
20 from you as well.

21 A. Okay.

22 Q. Since you're being interviewed today, I need to get some type
23 of identification from you. Now, I can pull you up in a database,
24 but what I would need from that first is driver's license number,
25 state, and a date of birth. Is that something you have available,

1 or would you prefer to share that after the fact with just me?

2 A. I'll give that to you.

3 Q. Okay.

4 A. My date of birth is [REDACTED].

5 Q. You said the [REDACTED] or [REDACTED]?

6 A. [REDACTED].

7 Q. And what year, sir?

8 A. [REDACTED].

9 Q. Okay, thank you. And do you have a driver's license number
10 or anything available?

11 A. I do, [REDACTED].

12 Q. Okay, thank you very much. And what state was that issued
13 in?

14 A. What state or date?

15 Q. What state, sir?

16 A. State is Massachusetts.

17 CWO [REDACTED]: Okay. So, before we jump into the proper
18 questions, I am recording the interview. I've previously
19 discussed that with everyone and I've had no objections. Is there
20 anybody online right now that has an objection to recording the
21 interview to make sure we get everything straight?

22 UNIDENTIFIED SPEAKER: No.

23 CWO [REDACTED]: Okay, hearing none.

24 BY CWO [REDACTED]:

25 Q. So, what is your position with Carlin Combustion, Mike? Can

1 you tell us a little about what you do?

2 A. I am the tech service manager, I also run the testing lab.

3 Q. Okay, and how long have you been doing that?

4 A. So, any technical issues -- I started in 1994, left for six
5 months and came back to work in 2003 -- came back six months later
6 in 2004.

7 Q. Okay, and how would you describe your -- like a normal job
8 duty?

9 A. Basically, I oversee all of the testing in the combustion
10 lab. I have three gentlemen working for me, one out of Maryland
11 who is a technical specialist, he does field trainings and service
12 calls. I have another gentleman who answers strictly service
13 calls for tech calls in our office and I oversee another gentleman
14 who basically does most of our application testing. I'm also into
15 new product development, larger burners, different burners, gas
16 oil burners and basically help out in the technical -- any
17 technical ways I can. If I got to go out to a job site, I will go
18 basically if one of our reps can't do it.

19 Q. Okay.

20 A. Basically I do a little bit of everything.

21 Q. Sounds like it. Are you familiar with the Carlin 601CRD oil
22 burner assembly?

23 A. Yes.

24 Q. Okay. About how long have you been working with that
25 particular assembly?

1 A. On and off throughout the 27-and-a-half years I've been
2 employed here. I mean, it's not something that we -- you know, we
3 don't focus on that as much only because commercial applications
4 don't come in as often as residential.

5 Q. Okay, and you consider the 601 -- you said commercial
6 applications, do you consider that unit to be a commercial?

7 A. Yeah, like, a commercial -- it's a small commercial burner
8 compared to some other companies.

9 Q. What would constitute a commercial burner versus residential
10 for your side of things with this particular burner?

11 A. Anything pretty much over three gallons I think they consider
12 a light commercial and as you go up it gets into the commercial,
13 industrial type of units.

14 Q. Okay. When you -- you talk that you're in development for
15 new systems, you provide technical assistance and things of that
16 nature. Are there any federal or state regulations or standards
17 that these burner assemblies have to meet, such as this 601 CRD,
18 for the manufacturer of the unit? Is there a particular standard
19 --

20 A. First the -- yeah, we have to meet Underwriters Laboratories
21 -- UL926.

22 Q. Okay. So, meeting UL296 for the construction manufacturing
23 of the unit, how about the function of that -- and all the
24 questions today are going to be geared around this particular
25 burner assembly, so I won't repeat it every time. Are there any

1 standards required function or safety devices for that unit for
2 you folks?

3 A. Function and safety falls under the UL recognition or -- it's
4 UL listed, so we have to perform -- oh, it's actually done before
5 my time but you have to perform a bunch of safety tests to get it
6 UL approved.

7 Q. Okay. Do you --

8 A. Meaning combustion, you know, they dictate what timings there
9 are in the control, and we do various, you know, combustion tests,
10 temperature tests, low voltage tests just to make sure that the
11 burner operates in a safe manner before it is UL approved.

12 Q. Okay. This burner assembly that we're talking about today,
13 has that particular unit -- has that gone through a lot of changes
14 over the last few years or could you estimate how long that
15 particular unit in its current form has been manufactured? Any
16 idea on that?

17 A. Give me a second to pull out a book to see if I -- well, I
18 really don't know off the top of my head. I could not give you an
19 exact date.

20 Q. Okay. Would you say over the last five years it's been
21 similar? I mean, do they go through a lot of changes?

22 A. It's a -- no, it's been pretty much the same construction
23 since I started here in '94 and it was -- I'm going to say it was
24 probably approved sometime in the '50's maybe. I'm -- and that's
25 just -- I'm guessing on that one.

1 CWO [REDACTED]: Okay, thank you very much for that.

2 Again, if anybody has any follow-up questions as I'm going
3 through here, please be my guest. Otherwise, I'll just keep
4 cranking through. I've got one page of questions here I'd like to
5 cover.

6 BY CWO [REDACTED]:

7 Q. So, we talked about some of the standards, Mike, and UL296
8 being one of them. Are you familiar with NFPA31 or NFPA36?

9 A. 31, not as familiar with 86.

10 Q. Is there any manufacturer recommendations for these units
11 that they be installed or operated in accordance with any NFPA
12 standard?

13 A. On the front page of our instructions it says US
14 installations -- burner appliance installation in the United
15 States must comply with the latest additions of NFPA31 and see
16 NFPA70, which is the electrical code.

17 Q. Okay, so the front --

18 A. And all applicable codes.

19 Q. So, the instruction manual for that particular burner states
20 they must meet current version of NFPA 31?

21 A. Yes.

22 CWO [REDACTED]: Okay.

23 MR. FELDBRUEGGE: And [REDACTED], just so you're aware, that is the
24 document that we did produce to you. It's document 000001.

25 CWO [REDACTED]: Roger that. I do have that, thank you very

1 much.

2 BY CWO [REDACTED]:

3 Q. Okay, so NFP31, I'd like to get into that. So, we talked
4 about standards they're required to meet for operational
5 conditions such as safety devices and so forth. Can you walk us
6 through what safety devices form a part of this burner assembly to
7 dictate its function? On those safety devices that you know would
8 be installed with a unit like this.

9 A. As it left our factory or in the field?

10 Q. I'd like to cover both because I understand there are
11 different components that are getting put together in the field.
12 What safety devices does it leave the factory with?

13 A. Basically, the primary controls and anything over three
14 gallons and hour needs two forms of cutoff. So, one would be
15 inside the fuel pump and one -- and the second one would be a
16 solenoid valve that would be installed on the pump --

17 Q. Okay, let's --

18 A. -- and then the primary safety control.

19 Q. Okay. So, you said the primary control and then anything
20 over three gallons, you said?

21 A. Yes.

22 Q. And that requires what? Could you get specific on those two
23 items that you mentioned? It requires two --

24 A. Primary safety control, two safety shutoffs, so basically,
25 when the burner shuts off it needs two forms -- two types of

1 shutoffs for the fuel. So, we provide a solenoid valve and there
2 is a shutoff called a cone valve inside the fuel pump which would
3 stop the flow of oil when the burner is off.

4 Q. Okay. So, first we have the solenoid valve and then what's
5 that other type of valve you mentioned inside the burner assembly?

6 A. It's a cone valve inside the fuel pump.

7 Q. Okay. Did this particular unit leave the factory with those
8 two items so far as you would expect or know?

9 A. Yes.

10 Q. Okay, and when you say three gallons, what are we talking
11 about, it's output per minute, per hour, or -- how do you measure
12 that three gallons?

13 A. Yeah, per hour -- three gallons per hour.

14 Q. Okay. Now, the solenoid valve I'm familiar with and we'll
15 see that in some pictures here. This cone valve, how does that
16 function? How does that close off the fuel as that secondary
17 means?

18 A. That works basically on RPM in the pump. It'll open all the
19 flow at around 28 hundred RPMS's and it shuts off pretty close to
20 the same, around 28 hundred -- it might be a little higher, it
21 might in 3450's or so. It opens and closes around 28 hundred RPM.

22 Q. Okay, so if we have a power loss or some kind of shutdown,
23 that burner assembly starts ramping down. When you get to 28
24 hundred RPM's, that cone valve will secure. So, that gives us two
25 means of securing fuel to the nozzle and to the assembly itself?

1 A. Correct.

2 Q. Okay.

3 A. Yes.

4 Q. Looking through the documentation, I noticed that the burner
5 assembly is cast aluminum, is that -- am I understanding that
6 correctly?

7 A. Yes, it is.

8 Q. Okay. Do you have any data or information on that casting
9 such as what its melt point would be?

10 A. I do not.

11 Q. Okay. Is there any non-destructive testing that's performed
12 on batches or lots of these cast assemblies to look for things
13 like, you know, fractures, or excessive porosity, you know, air
14 pockets within the casting? Do you guys do any non-destructive or
15 destructive testing on these units as they leave production?

16 A. I do not know if we do that. I don't think we do, I haven't
17 seen that done.

18 Q. Okay. What are the -- so, what are the mounting options?
19 So, when I look at the paperwork for this burner assembly, there
20 are a few different mounting options. So, what I'd like to do now
21 is we're going to kind of go back and forth in this PDF document
22 here.

23 A. Okay.

24 Q. And what I'd like to do, Mike, and everyone else, is I'd like
25 to go to page -- let's see here -- page 26.

1 A. Okay.

2 Q. Does this appear to represent the same burner we've been
3 discussing so far?

4 A. It does.

5 Q. Okay. So, when I look at this documentation, I see that
6 there a couple of different mounting options for this burner
7 assemblies and one of which is a direct mount to the flame tube,
8 and then other has an option for a pedestal mount. Can you talk
9 to -- so the --

10 A. Correct.

11 Q. When would you use one over the other? Is there a
12 manufacturer recommendation or standard practice and when one
13 would be preferred?

14 A. We don't have, like, a manufacturer recommendation. When we
15 sell it to say, like, an OEM, someone who's going to buy it from
16 us and install it on their unit, usually it's slant mounted
17 because we've seen the unit, we have done some testing on it, we
18 know what the bolt circle of their mopping (ph.) studs are, what
19 their opening diameter is. So, we weld a flange on it, we insert
20 the tube into the chassis, we put the -- there are four kind of
21 like set screws that do not penetrate the air tube.

22 But when we sell it to an OEM, we install two locking screws
23 basically that would penetrate the steel tube through the aluminum
24 chassis. That way when it's in shipping or they mount it on the
25 unit and then ship it, it doesn't have the tendency to separate.

1 Pedestal knob, it's something I would probably do if it was an
2 older retrofit, some, like, coal -- you know, coal conversions
3 that done have -- they basically have a hole in the front. You
4 mount the burner on a pedestal and then you seal the router with
5 furnace cement, something similar to figure seven on page 26.

6 Common practice in the field that I've seen, you know, even
7 though you have a welded air tube flange on that is mounted to the
8 chassis and bolted to the front of the unit, some guys -- the
9 majority of them, I wouldn't say everyone would either, you know,
10 put blocks underneath it. You could put a pedestal and blocks
11 underneath it depending on how high it is just to support -- you
12 know, take some of the weight off the two pieces, you know, just
13 added support for it.

14 Q. So, that's something that you would consider very commonplace
15 to further support that unit underneath even though you have two
16 mounting options? It would be typical to expect if we opened up
17 furnaces in other locations that the vast majority would have
18 additional support measures?

19 A. I'd say if I went to ten jobs with a burner this size, I'd
20 probably say at least half to six, seven of them might be
21 supported underneath. I said it's a common practice, but not
22 everybody would do it. I've even seen small, residential burners
23 that are supported with block underneath it.

24 Q. Is there any recommendations or guidance from Carlin
25 Combustion regarding advising a client or an installer to consider

1 those additional means of support? Or is it just up to the
2 installer and what they're comfortable with?

3 A. It's usually up to the installer. But, I mean, if somebody
4 asked me -- if they called and say I'm going to be installing a
5 601 (indiscernible), even a bigger burner I would probably
6 recommend that they support it a little bit just in case. Why? I
7 don't -- you know, some guys have the tendency to lean on the
8 burner when they stand up -- use it as something to help them
9 stand up. I've seen that happen. I think it's good practice to
10 support it.

11 BY CAPT FLAHERTY:

12 Q. Hey, this is David Flaherty. If you don't mind, I just got a
13 quick question. Sir, have you seen burners that aren't supported
14 by a mount fail?

15 A. No, actually in the years I've been here, I've seen a burner
16 fall off an air tube -- or haven't -- I haven't seen it and I
17 don't remember ever getting a phone call saying that they've had
18 one fall off.

19 Q. All right. So, then that gets me to, I guess, a new
20 secondary question. Then why would it be common practice to put
21 that extra support underneath?

22 A. Guys just do it, just for safety's sake and peace of mind,
23 maybe. It's common, but I've been to numerous jobs where they are
24 supported underneath.

25 Q. Even when they're not required?

1 A. Yes.

2 CAPT FLAHERTY: Okay. All right, thank you. Sorry to
3 interrupt you.

4 CWO [REDACTED]: That's absolutely no interruption at all and
5 great questions, Captain, thanks.

6 BY CWO [REDACTED]:

7 Q. All right. So, we've kind of gone over it's good practice,
8 we talked about supporting this unit. Mike, do you know the exact
9 weight of this unit as it would be when it ships from the
10 facility?

11 A. Off the top of my head, no.

12 Q. Okay.

13 A. Give me one second, I'm trying to find something. I thought
14 I had something written down for a burner that's just slightly
15 smaller, I'm just not sure where it is. I'm going to probably say
16 a good 50 to 75 pounds if I had to guess.

17 Q. Okay, Mike. Well, as you're looking through --

18 A. I don't have it. I'm going to say 50 to 75 pounds.

19 Q. Okay. I saw in the documentation somewhere that I think the
20 shipping weight was right around 65 points, would that make sense
21 to you?

22 A. Wait a minute. Yeah, approximate shipping weight, 65 pounds,
23 yes, that would make sense to me.

24 Q. Okay. All right, just trying to make sure that some of the
25 documentation I have actually reflects what you would expect it

1 to, make sure I have the facts straight here. So, there's no time
2 that a pedestal would necessarily be required, but you would
3 recommend it if someone contacted you with some of these larger
4 burner assemblies like this unit?

5 A. Yes. The only time that I can really say that a pedestal
6 mount is required is if it didn't have a slant, like on figure
7 seven of -- on page 26 of your document.

8 Q. Okay, thank you for that. That's helpful. All right. So,
9 next I want to take a look at another page here. I want to talk
10 about the fuel piping and I'd like to go to page 12 if everybody
11 can go do that. So now, here in the photo, Mike, and I hope
12 you've had an opportunity to look through these already?

13 A. I have.

14 Q. Wonderful. The fuel line coming in here, is this -- how does
15 this appear to you, good, bad, correct, incorrect? Anything
16 jumping out at you or is this a typical installation you'd see?

17 A. I don't see a safety shutoff, what we would call a firematic,
18 it's like a spring. It's in case of a fire, this would shut the
19 fuel line off. I don't see, as we call, a firematic valve. Then
20 it appears they may be compression fittings, which they're not
21 recommended.

22 CWO [REDACTED]: Okay.

23 MR. APELIS: This is Markus Apelis, this is to the technical
24 matter, could you explain what that firematic shutoff is and how
25 it functions?

1 MR. SHAYDA: The older ones have, like, a handle on top that
2 would -- in case of a fire, it would actually melt and it's a
3 spring return, so as you turn the knob in, basically, it pulls the
4 shutoff open to allow fuel to flow. But in case of a fire, the
5 handle would melt and it would snap itself shut so no oil would
6 come out of the oil line. A normal installation, there's one at
7 the tank and there's one mounted at the burner -- or as close to
8 the burner as possible. So, it's spring loaded, in case of fire,
9 it shuts to stop fuel from flowing.

10 BY CWO [REDACTED]:

11 Q. Hey, Mike, follow-up question.

12 A. Yes.

13 Q. To my knowledge and going through all of the documentation
14 and looking at things, those two items are required as per NFPA31,
15 is that a true statement?

16 A. Yes.

17 Q. So, in your opinion looking at this installation, was it
18 installed correctly with regard to the fuel supply piping?

19 A. In my opinion, no.

20 Q. Okay, thank you for that. Is there any requirement as to the
21 flexibility of fuel supply piping to these burner assemblies for
22 -- to eliminate things such as, you know, shifting or vibration?
23 Or any recommendations?

24 A. Normally -- well, this is the first I've ever seen one on a
25 ship, so normally, they're installed in a boiler room in a

1 building, so there's really no movement of the unit. But
2 normally, they would probably have a little bit of extra coil of
3 copper -- if it's piped in with copper, that way they can pull a
4 burner off if they have to and not disconnect things. That is
5 also common practice where they leave a couple loops of copper.
6 I'm not saying that, you know, it is needed, but it's common
7 practice that there is extra -- a little extra copper on the job.

8 Q. Okay. Thank you for that. So, if we go to the next slide
9 here, which would be page 13.

10 A. Uh huh.

11 Q. It allows you to look at that connection a little bit closer.
12 Anything change for you when you look at this or any other
13 concerns?

14 A. No, just a lack of safety shutoff and I do believe that is a
15 compression fitting which, I know in my own state of
16 Massachusetts, it's against code to use a compression fitting, and
17 I believe almost everywhere else.

18 Q. Okay.

19 A. Or I'll probably say most jurisdictions don't allow it.

20 Q. Okay. All right, thank you for that. We go to page 14. Can
21 you tell me what you think you see happened in this photo, sir?

22 A. It appears -- what I think happened is -- it looked like the
23 oil line broke at the threads kind of like where your arrow was
24 pointing.

25 Q. Okay.

1 A. So, it's hard to tell if it actually bent or it actually
2 broke.

3 Q. Okay. There are some other photos, we don't have them here.
4 It is my -- we did discover when we took this apart for evidence,
5 it was snapped -- the thread snapped at that connection.

6 A. Okay.

7 Q. In your manufacturer's documentation materials, do you
8 recommend the use of copper tubing, or is that just a standard
9 practice?

10 A. It could be copper. I mean, some -- it really depends on the
11 installer. They might install it in copper, they might install it
12 in black pipe. I've seen both in the installations.

13 Q. Okay. My next question here -- I guess I got a little ahead
14 of myself, so do -- are you familiar with the fusible length
15 device? And when we talk about the firematic, I try to stay as
16 far away from technical jargon as possible, but this firematic
17 valve, is that essentially a fusible link?

18 A. Yes.

19 Q. Okay. When you look at page 13 -- or rather 12 -- go to page
20 12.

21 A. Okay.

22 Q. Knowing what an FPA31 says and knowing what a standard
23 installation should meet, where would you expect that firematic
24 valve to be installed?

25 A. You can put a straight through firematic right where they're

1 going into the bottom. Now, there's two inlets on a pump, one
2 where it says installed in this picture, and then there is also --
3 it looks like a plug right above it, you could put a 90-degree
4 connector there. So, it could go in either port -- either inlet
5 port. You can put a straight connector in one or a 90-degree
6 connector on another.

7 UNIDENTIFIED SPEAKER: Can we just clarify which picture
8 we're talking about on page 13?

9 CWO [REDACTED]: Page 12, sorry.

10 UNIDENTIFIED SPEAKER: Page 12 and -- okay, got it, thank
11 you.

12 BY CWO [REDACTED]:

13 Q. Next question, Mike, this fusible link device, obviously, we
14 know NFPA31 requires it to be at the storage tank, as well as as
15 close to the burner assembly as possible. Does it appear there
16 would have been enough room in this location to install that
17 device?

18 A. Yes.

19 Q. Okay. Would you have expected it to be installed within the
20 burner enclosure box, this, you know, metal housing that holds
21 that assembly?

22 A. Yeah, I think I would expect it to be in there. I mean, I
23 don't see why -- I don't see any limiting fact of why it couldn't
24 have been.

25 Q. Okay. Based on what we've discussed, should this have -- and

1 again, some of these questions are similar, but I just want to
2 make sure that we're grabbing the right info here. In your
3 professional opinion, based on your 27 years of experience, should
4 a fusible link or firematic valve should it -- should that have
5 been installed in this location just to make sure we have you on
6 the records?

7 A. Yes, I do.

8 Q. Thank you. As far as maintaining these assemblies, what I've
9 seen is, you know, every service company is different and I'm sure
10 you have some service companies that you know are top of the line
11 and other ones that don't work with these quite as much, so they
12 may not have as much experience. So, when we look at this
13 installation and you've had a chance to look through some of these
14 photos and things, are there any other things that are catching
15 your eye where the installation may not have been what you would
16 expect when you take the door off this box?

17 A. Let me just look back through.

18 Q. And if you note something, just throw out the page number for
19 us?

20 A. Okay. We have the burner contained in a box and I'm assuming
21 that the -- to left, that is a makeup air -- that was makeup air
22 for the burner?

23 Q. That's -- yeah, that's the clean combustion air inlet.

24 A. Okay.

25 MR. FELDBRUEGGE: And [REDACTED], I just want to make clear, he

1 hasn't been out there. So, you know, he's obviously just looking
2 at these photographs.

3 CWO [REDACTED]: Of course.

4 MR. FELDBRUEGGE: Just so that it's known.

5 CWO [REDACTED]: Yeah, and I tried to select photos to just cover
6 the things that we're going to talk about. There's a lot more
7 going on external of the furnace and it's my expectation that the
8 other investigators in the lab would be able to glean information
9 from that. I did want to focus specifically on this assembly.

10 BY CWO [REDACTED]:

11 Q. So, when he's looking at it -- and Mike, just for you, if you
12 see something that just doesn't look like it was installed
13 correctly or that something was intentionally bypassed, anything
14 jumping out at you based on the pictures you can see today?

15 A. From what I can see today, it's just the oil supply piping
16 that is not correct.

17 Q. Okay. When I went through the documentation --

18 A. I mean, I can't see where the primary controls -- I mean,
19 there's nothing else in the box that I can really see. There is a
20 high limit in there, I believe. Whoops. Maybe it's in a
21 different photo.

22 Q. I don't think I have pictures of the control cabinet and just
23 so you know, a lot of that stuff was just absolutely burned up.

24 A. Yeah.

25 Q. If you go to page ten --

1 A. Okay.

2 Q. In page ten we can see a really good shot of the flange
3 mount, the flame tube. In the upper left-hand corner of that
4 photo --

5 A. Yeah.

6 Q. There is a small box that says Honeywell on the front and
7 that's something that we've had some interest in.

8 A. Okay.

9 Q. Any idea what that could be?

10 A. That -- it's possible that it's a high-limit control, like, a
11 fan-limit switch, something that would turn the blower out from
12 furnace to distribute the heat around through the ducts or in a
13 limit, meaning if the temperature inside gets to a certain
14 temperature, it'll shut the burner off. So, to me -- I'm assuming
15 and guessing it's a high-limit safety control and in a furnace
16 application it might be a fan-limit switch. It's the same thing,
17 the fan limit.

18 Q. And what --

19 A. Sometimes it turns the blower on and shuts it off in case of
20 high temps.

21 Q. Okay. Then what would -- what dictates the set point of
22 those?

23 A. That would come from the manufacturer of the furnace -- when
24 they want it to shut off. I mean, the installer can change it
25 also if he wanted to. But normally, they come preset from the

1 furnace manufacturer.

2 Q. Okay. For other installations that may be similar to this
3 one, is there a specific range you would expect that to fall
4 within? I can't imagine there are too many different setpoints
5 out there, is there a common level?

6 A. Yeah, usually -- I would say usually they turn the fan on
7 around 120 and off probably 160-ish. But most of the newer
8 furnaces are coming through with electronic boards that control
9 the furnaces, so the fan-limit switch is kind of -- a little bit
10 older technology. It still works, it's just a little older
11 technology.

12 Q. Okay, and just to clarify, when we say 120 or 160, are we
13 talking Fahrenheit or Celsius?

14 A. Fahrenheit.

15 Q. Okay. Any other safety devices? So, we talked about this
16 fan-limit control and high temp cut out are essentially the same
17 thing with regards to a furnace, any other safety devices on this
18 particular burner assembly that you are aware of? Again, speaking
19 just to the burner assembly.

20 A. Well, the fan limit will supply power to the primary control,
21 which will turn the burner (indiscernible).

22 Q. Okay.

23 A. I'm not sure if that answers your question correctly.

24 Q. It does. Would you consider the fuel solenoid valve to be a
25 type of safety feature?

1 A. Yes. Yeah, if for some reason that the cone valve or
2 something was stuck open in the pump, it gives you your -- another
3 means of positive shutoff.

4 Q. Okay. You mentioned earlier that you've never seen a burner
5 assembly unmount, fall down, or dislodge. I just wanted to
6 clarify, is that correct?

7 A. That is correct.

8 Q. Have you ever seen a casting failure on a burner assembly in
9 your time?

10 A. No, not on a job. I know -- well, we had one get run over by
11 a truck recently.

12 Q. I'm pretty sure that --

13 A. But no, I haven't -- yeah, that was kind of a good stress
14 test. But no, I haven't seen a casting fail.

15 Q. Okay. What's a common failure -- when you look at the photos
16 here, are there any common failures you've seen in the past that
17 you think could've existed in this situation?

18 A. I'm not sure how to answer that. You mean, like, a pump
19 failure or something along those lines?

20 Q. If you look --

21 A. Or are you talking about the casting or something?

22 Q. If you just look at the overall pictures of this burner
23 assembly that are in this combustion box, are there any -- I don't
24 want to say common failures, but have you seen failures before
25 that have resulted in what we see here? It's a hard question to

1 answer, I know.

2 A. I've seen -- yeah -- no, I haven't seen anything like this
3 before to be totally honest with you. I have seen, you know,
4 where the emission -- I have seen, you know, ignitors that have
5 had issues, melted, couplings that have melted. The coupling
6 connects the pump to the motor and the motor spins, then if the
7 coupling isn't there then you will never get fuel out of the pump
8 because it won't be spinning. I have seen, you know, heat warp,
9 melt couplings. Not necessarily because, you know, anything
10 caught on fire, but a severe downdraft after the burner shuts off
11 and you have heat coming back into the burner. Usually, the
12 coupling melts first, the capsule, which would set the flame, that
13 may melt or get distorted. I haven't seen anything cause anything
14 like this yet.

15 Q. Okay. If everybody can go to page 15. Mike, there's a red
16 circle -- and this photo isn't great, but on page 15, I just kind
17 of wanted to highlight an area of interest here and then wanted to
18 talk about -- go ahead.

19 (Audio lapse)

20 Q. When you look at that area circled in red, what do you think
21 that is?

22 A. It looks like the edge of the chassis. I would say that
23 little groove in it was probably from the locking screw that was
24 holding it to the air tube. It almost looks like it broke.

25 Q. Okay. Next, we can jump over to page 20.

1 A. Okay.

2 Q. Kind of the same questions here. So, the bracketed area, my
3 understanding is the bottom half of that circular opening that
4 mounts over the flame tube. Do I understand that correctly?

5 A. It looks like it, yes.

6 Q. Okay, and the small area circled is just another point of
7 view from page 15.

8 A. Right.

9 Q. Do you think that looks like a fracture, or melting, or what
10 do you -- any idea?

11 A. The circled part looks like it might've been broken above the
12 right -- the whole right side of the burner appears to be melted
13 away -- if you look just to the right of the circle. And that
14 square piece would be the top, which would be the top part of the
15 chassis where the air tube would mount. You can actually see the
16 set screw right in the middle of it -- or a set screw.

17 Q. Okay. Look at page 21. And I only have a couple questions
18 left. So, on page 21 -- again, another point of view for that
19 area -- there's a little groove in that coupling. Is that where
20 you believe that set screw passes through?

21 A. Yes, and that little dot below it is another -- it's like a
22 friction fit, that's another set screw it's actually
23 (indiscernible).

24 Q. Could you give me nomenclature on that item again? What did
25 you call that, just another set screw?

1 A. Just another set screw.

2 Q. Okay. If we go to page 23, this is the last close up I have.

3 A. Yeah.

4 Q. Again, the groove, I'm believing that to be where the set
5 screw passes through one of them for mounting to the flame tube.

6 A. Right.

7 Q. And then, this other circular item here, that's a secondary
8 set screw?

9 A. Yes.

10 Q. Okay. Do you notice anything in the proximity to either of
11 these set screws? Do you see the fracture there?

12 A. It appears to be the crack just to the left of the bottom
13 one? Yeah.

14 Q. When you look at this, what do you think could cause those
15 types of failures? So, we have what appears to be a fractured
16 service -- surface where the top set screw came through and then
17 we have kind of a compound fracture, or it appears to be, that
18 then kind of passes down and towards the front of that chassis
19 where she mounts to the flame tube. Looking at this photo and
20 both the fractured service -- surface and then that other
21 fracture, what in your mind could've caused something like that?

22 MR. FELDBRUEGGE: Again, I just want to make sure -- you
23 know, he hasn't been out there, hasn't actually looked at this
24 stuff.

25 CWO [REDACTED]: Yeah, of course.

1 CWO [REDACTED]: I just kind of -- looking at this and given your
2 experience with burner assemblies and all, taking all the other
3 photos of the furnace out of the equation here, is there a type of
4 failure with regard to the furnace's operation that could cause
5 this tube fail in that manner?

6 MR. SHAYDA: I haven't seen a failure like this before. What
7 would cause it to fail like that in just looking at the pictures,
8 it would be hard to give a concrete answer to that. But my guess
9 would be if I look at it -- it's like picture numbered -- or page
10 21 it looks like the whole right side of the chassis has been
11 melted. There's a lot of it missing, I'm guessing it may have
12 distorted the weight on it and put some extra weight and it maybe
13 got soft from the heat and cracked.

14 CWO [REDACTED]: Okay. So, we're looking at page 23 and then,
15 you know, you see the fractures -- and I know it's hard to tell,
16 and I know you don't want to give an official determination and
17 I'm certainly not looking for that, just -- and your opinion is
18 very much appreciated. You know, looking at something like this,
19 if that heated, and distorted, and then the burner assembly fell
20 down, what would have caused the heat to get so significant in
21 your mind? Is there any condition that could've -- that furnace
22 could've been in where that coupling, that chassis got so hot that
23 it fractured, then fell off? You know, because we have a few
24 safety devices on here.

25 (Audio lapse)

1 MR. SHAYDA: I, like -- you know, I haven't been there, so I
2 don't know what the venting system looked like. I mean, if the
3 furnace was plugged -- if the vent was plugged you're going to get
4 some excess heat back on the burner. But, you know, like I said,
5 I haven't been there so I don't know of any -- what the venting
6 and everything looks like. I don't know what would cause this,
7 well, other than say a fire. But I don't know if there's anything
8 else in that system that would actually cause the heat to come
9 back on the burner other than a blocked tube.

10 CWO [REDACTED]: Okay.

11 BY CAPT FLAHERTY:

12 Q. Just a quick question, this is David Flaherty again from the
13 NTSB. The enclosure that the burner was put -- that was put
14 around the burner, is that common?

15 A. In -- well, I don't see it that often. In a warm air furnace
16 in a residential, it's very common to have the burner basically
17 behind the cover. Usually, there's vents in the cover for makeup
18 air -- or for combustion air but it looks like they're bringing
19 combustion air in through I'm going to say probably a ten-inch
20 duct up in the left-hand side of the unit.

21 Q. Okay.

22 A. I wouldn't say that that's that uncommon, but --

23 Q. And just a quick -- the compression fitting, what type of
24 material is that made out of again?

25 A. It's probably brass.

1 Q. And that's the thing that cracked and failed?

2 A. Oh, the thing that cracked, it looked like just a standard
3 quarter-inch NPT nipple.

4 Q. It's made out of nickel?

5 A. No, it's on that cast, it's probably some kind of steel
6 fitting.

7 CAPT FLAHERTY: Okay. All right, thank you.

8 BY [REDACTED]:

9 Q. Since you weren't there, Mike, just to ask a better question,
10 so when we look at -- let's see here, page 12, you talked about if
11 the furnace were plugged or a vent were plugged, something of that
12 nature could cause the unit to get hot. So, when you look at page
13 12, on your left there, I think we have about an 11-inch opening
14 and this is the clean-air combustion inlet to that burner
15 enclosure. This duct runs for 50, 60 feet outside to kind of like
16 a good neck with a vent screen and then a closure device.

17 A. Okay.

18 Q. I don't like hypotheticals, but I want to see if this relates
19 to what you think is in the realm of possibility for this
20 overheating. If that combustion air inlet duct on the outside of
21 the vessel were accidentally closed -- or any system, if that clean
22 air combustion inlet is closed, could that cause the chassis to
23 start to overheat and that flame back out of the furnace?

24 A. Yeah. Once you have no makeup air, you're going to run very
25 rich, you're going to create a lot of soot and that may not take

1 that long depending on the flue passages and everything else
2 through the unit and the chimney. You could plug that unit pretty
3 solid and then when the burner's running it, you're only going to
4 heat it up and it's going to come back through the burner.
5 There's nowhere for the heat to go, so it may back up through the
6 burner.

7 I have seen in -- you know, numerous applications I go to a
8 job site and pull the combustion head out with the nozzle and the
9 retention head and the electrodes and then whole retention head is
10 just covered in soot because that's the only place it can go.
11 Now, on a light off it kind of blows back in through the chassis.
12 During testing in our own lab I've seen, you know, if there's too
13 much back pressure, like a plug flue -- well, we only have plug
14 flues in the lab here, but something with a lot of back pressure,
15 a plug flue will give you a lot of back pressure. I've seen that
16 in startup where it has -- actually has flame come out of the air
17 inlet. So, you know, it'll come back even though the fan is
18 blowing down the air tube, blowing for combustion air. It is
19 possible to get a lot of heat backed up onto the burner.

20 Q. Okay. So, you said you've seen where the flame comes back
21 out. In that scenario, where does it come back into, the chassis?

22 A. Yeah, it would -- it could pull back into the chassis of
23 something with too much back pressure. Yes, it could.

24 Q. Okay. So, I close off my --

25 A. I've seen it with oil burners and I've seen it with gas

1 burners.

2 Q. Okay.

3 A. Yep, I mean, if you close off your combustion air and the
4 unit was plugged so you can't get your exhaust gasses out and the
5 burner to come on and light, yeah, you could actually see a flame.
6 I mean, it just happens for an instant until it gets going -- come
7 out the air inlet, which would be underneath the fuel pump. So,
8 if you're looking at page 12, you'll see just to the right of the
9 oil supply, you see two screws and then you see kind of like a
10 little post sticking out which another one going to the right
11 towards the gas connection. That is your actual air setting, so
12 you would open and close that to dial in your combustion air. So,
13 most of your combustion air comes underneath the pump through the
14 side of the chassis.

15 Q. Okay. I've heard a technical term in talking with another
16 expert, they referred to some of that flame backing out as
17 rollout. Is that a term you're familiar with?

18 A. Yeah, some of your smaller, residential gas boilers, they
19 have rollout switches. So, if there was a flame or anything and
20 you get enough heat back, it shuts the gas furnace off. So yes,
21 I've heard that term before, a rollout.

22 Q. Okay. So, let's assume -- not assume. If that combustion
23 air inlet were closed and the unit started to heat up, you said it
24 would soot up, you could get some flame backing under the chassis.
25 What's going to shut down that furnace? Because we have safety

1 devices on here and had that occurred, I would have expected
2 several things to happen. And I don't want to lead you, but what
3 would have put this furnace until a shutdown scenario had the
4 clean-air inlet been closed?

5 A. Probably the Honeywell, the fan-limit switch. Once you get
6 the -- once you get soot on probe of the fan limit switch, the
7 soot's going to act like an insulator, so it's not going to heat
8 up as fast. So, you could over temp it slightly. So, instead of
9 shutting off at 150, it might've gone up 180, so it's not as
10 accurate.

11 Q. So, the limit switch could've shut it down, but it's also
12 possible that that's --

13 A. Well, actually, yeah, the limit -- actually, the limit would
14 be in the air supply, so that wouldn't be the combustion chamber
15 perse, so you wouldn't get soot on that probe. Sorry, I misspoke.

16 Q. Right, because that's just inside the heat exchanger,
17 correct?

18 A. Yeah, that's in the -- no -- yes, in the heat --

19 Q. Okay. So, your opinion, the high-limit switch may have been
20 able to shut it down?

21 A. Yeah. It would've shut -- it should shut the burner off,
22 yes. But if --

23 (Crosstalk)

24 MR. SHAYDA: Go ahead.

25 CAPT FLAHERTY: I'm sorry, the high-limit switch is what

1 again? If you wouldn't mind.

2 MR. SHAYDA: That would be pretty much in, like, the heat
3 exchanger. That would shut the burner off when it hits a higher
4 temperature.

5 BY CWO [REDACTED]:

6 Q. All right, so we have a high limit. Now, with rolling
7 through the same scenario, you have that high limit that could or
8 should shut the furnace down. If it doesn't, what would be the
9 next control or thing that would shut that furnace down?

10 A. I'm not sure how it was wired, I don't know if there was a
11 thermostat connected to the oil burner primary control.

12 Q. There was an external thermostat --

13 A. I mean, normally, -- okay. Yeah, I mean, normal operation,
14 the thermostat would shut the burner off first because it hit room
15 temperature. But if the temperature and the furnace went up and
16 hit high limit, that would shut it off first.

17 Q. Okay. So, initially, more than likely you'd get a high limit
18 and then secondary once the space heat hits called for temp, it
19 would also shut it down?

20 A. Yes. Or vice versa, if the space heating hit the temperature
21 first, the thermostat would shut it off first. If the thermostat,
22 you know, didn't hit the temperature in the room or the thermostat
23 hasn't satisfied yet and the high limit hit its set point first,
24 then that would shut off.

25 Q. Okay. So, you mentioned sooting up is a condition that could

1 occur if you have a blockage or say the cleaner combustion inlet
2 were closed, would that soot up -- is it possible that the
3 capsule, the flame eye would soot up and also go through shutdown
4 if the thermostat or the high limit failed?

5 A. I believe it's possible that if you got enough -- if you got
6 soot back onto the capsule, yes, it would shut it off if it could
7 not see the flame.

8 Q. Okay. So, I'd like to look at page 19. This furnace, so you
9 know, was installed almost exactly a year before this failure
10 occurred. However, it was run very little and estimates put it
11 at, you know, maybe two months, three months at the most. So,
12 considering the furnace was new, this combustion chamber was new,
13 the exhaust stacks were cleaned with the furnace was installed,
14 when you look in this combustion chamber, does that reflect two to
15 three months of service based on what you can observe in that
16 photo?

17 A. It looks like there's a significant pile of debris towards
18 the back wall. There is quite a bit of soot on the side, you
19 know, the bottom left and bottom right. The top it doesn't look
20 like there's a lot. I would say it wasn't running that clean.
21 Normally, you like to see the combustion chamber, you know, almost
22 spotless. I mean, two to three months of running, you really
23 shouldn't see much in there at all.

24 UNIDENTIFIED SPEAKER: And just to be clear, what picture,
25 Mike, are you looking at? Or pictures?

1 MR. SHAYDA: 19 -- page 19.

2 BY CWO [REDACTED]:

3 Q. All right, just going through the last few questions, we
4 talked about rollout. You said it wasn't looking that clean, I
5 would tend to agree. For two to three months of run time, that's
6 a pretty sooted up combustion chamber. Now, I do have a question
7 for you, it's regarding the burn out -- the fuel nozzle.

8 A. Yes.

9 Q. So, if we go to page 27 and you can kind of flip between
10 pages 27 and 28.

11 A. Okay.

12 Q. I have some data back here because during the original
13 install, there were some questions as to what nozzle should be
14 installed. So, when you look at the documentation for Carlin, it
15 indicates that the nozzle should be a 45 semi-solid or a 45 hollow
16 type.

17 A. Correct.

18 Q. And the nozzle that shipped with the factory and was
19 installed was a 7.0 45-B which is a solid spray pattern. Would
20 you consider that acceptable or was that --

21 A. Right.

22 Q. Is that an error?

23 A. No. When you look at that same page, 28, like the
24 Powermatic, the lab burner specification, that comes from us.
25 Normally, you know, the unit has been tested. I think in this

1 case that the seven gallon 45-H and then you seen the changes last
2 made seven gallon 45-H, I believe, has been discontinued by the
3 manufacturer, Hago, and we -- I believe our engineering manager
4 and Powermatic had a discussion and our spec changed from the 45-H
5 to the 45-B Delavan nozzle.

6 But normally when we do our application testing, which I
7 oversee in the lab -- I mean, I know our literature said a 45-SS
8 or a 45-H is the recommended, but when we do our testing, if
9 that's not always the case, we will find nozzles that work better
10 like, on page 27 -- like you said in the red outlined box, it's
11 more of a generic recommendation. Let's say if someone was going
12 to buy this burner wholesale, you know, just buy at a supply
13 house, and go install it in their unit, well try these nozzles
14 first is basically what they're saying. But when we sell it
15 directly to a manufacturer, normally it has been tested and
16 approved by the manufacturer and it may be totally different than
17 what's listed in our generic setup.

18 Q. Was the 45-B Del tested in the lab for this particular
19 installation?

20 A. That I don't know when they did the original testing, I don't
21 know when they did it.

22 Q. Is each unit tested in the lab prior for its particular
23 arrangement?

24 A. It may -- like I said, I have never seen this unit in a lab,
25 it was specked out before I started here. So, I don't know if it

1 was done in the Carlin lab at the time, or if was done in the
2 Powermatic lab. Some manufacturers do their own testing. You
3 know, we may go down and verify it or they may sent the unit to us
4 and we do the testing and they come here and verify it, or they
5 just say okay, you know, we trust your testing. But most OEM are
6 -- like in this case, was most likely tested by either us or
7 Powermatic.

8 Q. If it was tested by you guys, that could have been as much as
9 27 years ago?

10 A. It was before I started here, yes.

11 Q. If the 45-B Del nozzle, is that more likely to cause soot up
12 issues, or is that just dictate based on its combustion and how
13 you have it dialed in for draft and everything?

14 A. Yeah, I mean once -- well, a normal installation, the burner
15 would've been installed in the unit and a combustion test would've
16 been performed to make sure it's operating properly and that --
17 basically that needs to be done on every installation.

18 CWO [REDACTED]: Okay.

19 CAPT FLAHERTY: If I can, [REDACTED].

20 Mike, we've talked about a number of different nozzles here,
21 you know, the 745-B and the 745-H and all that. Just to be clear,
22 these are all acceptable nozzles from Carlin's perspective, right?

23 MR. SHAYDA: Yes, the Hago has been discontinuing nozzles
24 quite a bit lately. They were bought by a company, Danfoss, and
25 moved over to Europe and if they don't sell a lot of a particular

1 size, they'll discontinue it. Lately we've been doing a lot of
2 larger commercial testing and during that testing, you know, a lot
3 of the 45-H's, as one of the nozzles that's being discontinued,
4 I've been substituting D nozzles in our own lab and different
5 appliances, and different burners and they have worked as well or
6 better than the actual 45-H. From what I've seen, I really --
7 from what I've seen testing in a lab, I wouldn't see the 45-B as a
8 problem or something that may cause soot. However, you know,
9 there are always those instances where you have a brand-new nozzle
10 and there may be -- the flame may not be right coming out of the
11 box and that would be seen during the normal combustion test and
12 setup of the burner before they put it in operation.

13 BY CWO [REDACTED]

14 Q. Mike, I've got two questions.

15 A. Okay.

16 Q. Is this burner assembly designed for shipboard marine use
17 which would account for ship movements and vibration because those
18 are normal occurrences for shipboard use. Has this burner
19 assembly installation ever had any vibration testing?

20 A. Not that I know of.

21 Q. Has the unit ever been specifically evaluated for shipboard
22 marine use?

23 A. Again, not that I know of.

24 Q. Considering the nature and the additional environmental
25 concerns such as vibration and shifting movements that we see on

1 marine platforms, as a technician with you experience and being in
2 your position, do you think it would've been prudent to have a
3 pedestal mount for this install?

4 A. Yes. With the vibrations like you said, yes, I think it
5 would've been advisable to put one in. Or at least some kind of
6 support underneath the burner, yes.

7 CWO [REDACTED]: Okay, Mike, that's all the questions I have
8 right now. I really appreciate you trying to explain this to me.
9 We don't see these units as often as you do, so your insight is
10 very valuable. I think we got a lot of good information that just
11 helps us understand the situation a little bit more. So, thank
12 you for your time.

13 I'd like to kind of go around the virtual room here. Captain
14 Flaherty or anyone else, does anyone have any follow-up questions
15 we'd like to discuss specifically with Mike?

16 CAPT FLAHERTY: This is Captain Flaherty, no, your questions
17 and answers were very informative, thanks.

18 MR. APELIS: This is Markus Apelis, I've got just a couple
19 (indiscernible).

20 CAPT FLAHERTY: It's tough to hear you, Markus, I don't know
21 if anybody else is having that problem.

22 CWO [REDACTED]: I can't hear him either.

23 MR. APELIS: Sorry, are you able to hear me now?

24 CWO [REDACTED]: A little better.

25 CAPT FLAHERTY: A little better.

1 MR. APELIS: So, I just wanted to ask, Mike, do you know
2 where this particular burner assembly was manufactured?

3 MR. SHAYDA: I believe it was manufactured here in North
4 Haven, Connecticut.

5 MR. APELIS: And I was listening to you describe most of the
6 installation process and the different features of the safety
7 devices and I think I heard you mention things like you
8 (indiscernible). And I guess what I wanted to clarify is with
9 respect to this particular assembly, what is (indiscernible)? How
10 did this burner make it into (indiscernible)?

11 MR. SHAYDA: I'm sorry, I couldn't understand the question.

12 CWO [REDACTED]: Markus, we really can't hear you. There's a lot
13 of background.

14 MR. APELIS: Yeah, sorry, I'm on the road today. So, my --
15 is this any better?

16 CWO [REDACTED]: Yeah.

17 CAPT FLAHERTY: Yes.

18 MR. APELIS: Okay.

19 BY MR. APELIS:

20 Q. I guess my question was so, do you have an understanding of
21 the supply chain in terms of how this burner assembly made it into
22 this particular furnace?

23 A. Basically, all I can say is we got an order from Powermatic,
24 we built the burner, we sent it to them and where it goes, you
25 know, after that, we don't know.

1 Q. Okay. So, when you were describing some of the safety
2 features, and the safety devices, and the installation, I heard
3 you mention, like, the OEM or the installer, are you talking about
4 Powermatic in that -- in those situations?

5 A. Yeah, OEM would be the -- be Powermatic.

6 Q. Okay.

7 A. They're the original equipment manufacturers. So, we would
8 sell it to them and then they would sell it to the installer.

9 Q. Okay. So, when you referred to the installer either doing
10 something or not doing something, you're talking about whoever put
11 it into the field past Powermatic?

12 A. Correct.

13 MR. APELIS: Okay. All right, I just -- yeah, I just wanted
14 to make sure I understood the sort of identity of the people that
15 you were talking about. All right, those are all the questions I
16 had, thanks.

17 MR. FELDBRUEGGE: This is John, I just have a couple.

18 BY MR. FELDBRUEGGE:

19 Q. Mike, did anybody, to your knowledge, ever tell Carlin that
20 this burner would be used in a marine vessel?

21 A. Not that I know of. I don't think so.

22 Q. Had you guys manufactured burners specifically for a marine
23 vessel in the past?

24 A. To my knowledge, no. I don't know.

25 Q. So, it's fair to say, you're sure there's probably --

1 A. I'm sure there's probably a few more out there, but I don't
2 think I've ever heard anyone saying hey, this is going to go on a
3 boat.

4 Q. Okay.

5 A. I mean, I've had -- I think I've had a tech call saying I
6 have a particular burner on a boat years ago, but nothing recently
7 that I can recall.

8 Q. So, when Powermatic calls and says we need this burner, they
9 don't tell you hey, this is going on the MV *Roger Blough*?

10 A. No, they -- you know, it might be going in a warehouse
11 somewhere, it might be -- I don't know where it's going after the
12 fact.

13 Q. Okay, and then the other thing I just wanted to follow up on
14 in the installation, I think -- and correct me if I'm wrong, it
15 sounds like you -- Carlin sort of relies on the installer to, you
16 know, use their judgement on how to actually install these
17 burners?

18 A. Yeah, basically. You know, if it comes slant mounted, I
19 mean, it's up to them to -- you know, they're going to mount it on
20 their appliance. Like I said earlier, I mean, most guys will
21 support it, some won't, some rely on just the burner alone to
22 clip. Again, you know, normally it's in an apartment building, a
23 warehouse, a hospital, a school, you know, nothing's moving.
24 (Indiscernible) up to the installer.

25 Q. (Indiscernible).

1 A. I'm sorry?

2 Q. It's fair to say that the mount that should be used is
3 determined by the specific scenario, specific burner box, or, you
4 know, whatever the situation calls for?

5 A. Yeah, I would say so. I mean, if it was me and then if it's
6 just going to --

7 (Audio lapse)

8 A. -- I'd probably support it, you know, it's a bigger burner
9 and I'm a little more cautious, so I'd probably support the
10 burner.

11 Q. More support the better?

12 A. Yeah. I mean, I don't really do it in the lab here because
13 it's, you know, not a permanent installation.

14 Q. Yeah, you're not out to sea.

15 A. That either.

16 CWO [REDACTED]: Follow on to that, though. I know, John, yes,
17 it's kind of up to the installer on how to support it, but, Mike,
18 Carlin's manufacturing a product and the mounting options are
19 documented in your literature. So, Carlin does recommend and
20 intend for these units to be installed in accordance with the
21 manufacturer's recommendations, correct?

22 MR. SHAYDA: Yeah, I guess you could say that.

23 CWO [REDACTED]: Now, granted, you don't have control over what
24 happens in the field later on, obviously, I just wanted to clarify
25 that your instructions in your manuals do dictate mounting

1 operations and there's an expectation that those methods have been
2 evaluated for safety of service, but not necessarily shipboard and
3 given your understanding of the situation, a pedestal mount
4 would've been prudent and you would've recommended it.

5 MR. SHAYDA: Yes.

6 CWO [REDACTED]: Thank you.

7 MR. FELDBRUEGGE: That's all I have to be clear.

8 CAPT FLAHERTY: That's it for me, thanks, Mike.

9 CWO [REDACTED]: Mike, thank you so much. Did anybody else have
10 any follow ups? Otherwise, we've gone a little over here on time,
11 but I think this was productive.

12 MR. APELIS: No, I'm fine.

13 CWO [REDACTED]: Okay. Well, with that, John, Scott, thank you
14 for putting this together.

15 Mike, thank you so much for, you know, your cooperation and
16 the insight you provided today.

17 Captain Flaherty, thanks for being there as always. I
18 appreciate the continued support.

19 Markus, if there's anything after the fact, any questions, or
20 concerns for me, let me know.

21 I did record the interview, so that will be put in our
22 casework system and will be forwarded to the NTSB for
23 transcription as well. I know I usually get a lot of questions
24 hey, can I get a copy, can I this, can I that? Those are
25 possibilities, but they probably won't be for some time. But if

1 you do have a specific request for access to the information
2 obtained today, please send that to me in writing -- a formal
3 request, that way it requires me to respond and get the ball
4 rolling. Barring any other further questions or concerns, I'd
5 just like to conclude and thank you everyone for your time.

6 MR. FELDBRUEGGE: Thanks, one quick point -- I mean, just off
7 the record just because I have you [REDACTED] and Markus. Are you guys
8 still thinking that this October 5 date is going to happen as
9 scheduled, or are we maybe still looking to probably have to push
10 that back?

11 MR. APELIS: Yes. No, it's going to happen. Hold on. I'm
12 sorry, yeah, we're going to proceed on September 10th, next
13 Friday, so visual only and then repeat that on October 5. The lab
14 confirmed their availability on both those days.

15 MR. FELDBRUEGGE: Okay. Just making sure because our folks
16 are ready to be there.

17 MR. APELIS: And you guys -- John, you guys wanted to come on
18 10-5, right?

19 MR. FELDBRUEGGE: Yeah, we're all -- our whole team is coming
20 on 10-5 and that'll be a repeat, Markus, of the visual on 10-5?

21 MR. APELIS: Correct, by then I want to move -- so, what I
22 want to do next week is do visual only and then have people weigh
23 on, you know, what further examination or testing they want done,
24 repeat the visual only on 10-5 for anybody who can't make it on 9-
25 10. But then whatever, you know, further protocol is developed, I

1 want to kind of do it sequentially from there. So, if we can
2 start the further testing on 10-6, I'd just assume do that.

3 MR. FELDBRUEGGE: Okay. I mean, I -- yeah, all right, we
4 need to talk to our experts but that's --

5 MR. APELIS: Oh, of course.

6 MR. FELDBRUEGGE: That might be a little quick, I mean, given
7 the fact that we can't get there until 10-5.

8 MR. APELIS: Sure -- no, I understand.

9 MR. FELDBRUEGGE: So, we'll discuss and we can circle back
10 and consult with them and then follow up with you on that.

11 MR. APELIS: Right, and I'll obviously keep you all in the
12 loop on what the recommendations are coming out of 9-10 so that
13 you can have those discussions in advance with your experts. And
14 then obviously -- and, you know, 10-6 might be a little hyperbole,
15 but what I don't want to do is wait until November to start, you
16 know, whatever further additional test.

17 MR. FELDBRUEGGE: Yeah, no, I understand that. I -- you
18 know, I was thinking more along the lines of a week or two. But
19 that -- you know, we can discuss that further as we go along.

20 MR. APELIS: Okay, fair enough.

21 MR. FELDBRUEGGE: Okay. All right, thanks, guys.

22 MR. APELIS: Thanks, take care, everybody.

23 CWO [REDACTED]: Thank you.

24 MR. APELIS: Have a good week.

25 MR. FELDBRUEGGE: You too.

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CWO [REDACTED]: That concludes the interview.
(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

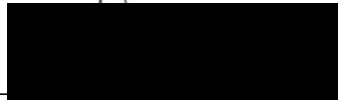
IN THE MATTER OF: *ROGER BLOUGH* CASUALTY
 IN STURGEON BAY, WISCONSIN
 ON FEBRUARY 1, 2021
 Interview of Michael Shayda

ACCIDENT NO.: DCA21FM015

PLACE: Via telephone

DATE: September 21, 2021

was held according to the record, and that this is the original,
complete, true and accurate transcript which has been transcribed
to the best of my skill and ability.



Carolyn Hanna
Transcriber