

CITY COUNCIL MEETING

JANUARY 7, 1981

AA-20
AA-47
333

REPAIRS TO FIRE
ENGINE 20x4
APPROVED

Following introduction of the matter by City Manager Graves, Council, on motion of Councilman Pinkerton, Katnich second, directed that the necessary repairs to Fire Engine 20x4 be made by the most competent engine repair firm at a cost of approximately \$35,000.00

On motion of Councilman Pinkerton, Murphy second, Council approved a Special Allocation in the amount of \$35,000.00 to cover these repairs.

Get the problem in getting
in diesel -
coordinate pump harmonium

Spent \$4000 - \$5000 on repairs
since we fixed transmission
& clutch.

R&L Desc/60	20000+ labor
200	6000
<hr/>	<hr/>
6000	26000



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

January 7, 1981

FIRE DEPARTMENT

TO: Henry A. Graves, Jr., City Manager
FROM: Donald MacLeod, Assistant Fire Chief
SUBJECT: Repowering Engine 20X4

Del Schwieger of F.B. Hart Company has quoted me, by telephone, a price of \$34,180.70 for repowering Engine 20X4. There will be an additional charge of about \$600.00 if they have to regear the Hale Pump Unit. Mr. Schwieger is expecting a call from Hale Pump Company today for their final recommendations.

The repowering job for Engine 20X4 shall include at minimum the following items properly installed:

1. Detroit Diesel 6V-92 engine, with all accessories.
2. Allison Ht-740 automatic transmission, 4 speed.
3. Donaldson, or equal, dry type air cleaner properly sized for the engine.
4. Morse throttle, transmission shift, and transmission modulator controls.
5. Transmission lock-up solenoid valves.
6. Transmission cooler integral with engine.
7. Radiator properly sized for engine.
8. Vickers power steering pump.
9. 105 Amp. alternator.
10. Donaldson muffler, exhaust pipe and tail pipe properly sized for engine.
11. Motor mounts and mounting brackets.
12. Speedometer drive and cable.
13. Transmission oil filter.
14. Transmission temperature gauges and sender.
15. Engine cover reworked as necessary and sound insulation provided.
16. New drive shaft and universal joints.
17. All miscellaneous belts, hoses, fittings, brackets, etc. to properly complete the installation in a businesslike professional manner.
18. Air compressor of proper size to operate brakes and horns complete with moisture filter.
19. Hale pump shift indicator light kit #546-0490-00.



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

January 2, 1981

FIRE DEPARTMENT

TO: Henry A. Graves, Jr., City Manager
FROM: Donald MacLeod, Assistant Fire Chief
SUBJECT: Repair of Engine 20X4

During the weekly road test on Sunday, December 21, 1980, Engine 20X4 was found to have a bad vibration at 1100 R.P.M.. Specialty Mobile Maintenance has checked out Engine 20X4, and has found this vibration to be caused by a broken crank shaft.

Engine 20X4 was purchased in 1969 and powered with a Hall-Scott 1091 cubic inch has engine with a manual transmission. The Hall-Scott Engine is now obsolete. Internal parts are very hard to get. Some parts are not available at all and have to be manufactured. The transmission is also obsolete as a unit, with the availability of parts becoming an increasing problem.

Specialty Mobile Maintenance checked out the availability of parts for possible repair of Engine 20X4. Bay Engine is the only known supplier of parts for this engine in Northern California. Mr. Davidson of Bay Engine Co. is unable to supply the part necessary to repair the engine. If the parts were available, he estimated the cost of an out-of-frame overhaul would be close to \$15,000.00

Connell Motor Truck Co., Inc. of Stockton was also contacted about the possible repair of Engine 20X4. Larry Alberg, Service Manager of Connells has checked his sources and is also unable to obtain the parts needed to repair Engine 20X4.

Repowering Engine 20X4 with a diesel engine and automatic transmission appears to be the best solution for our present problems. I would like to stress that it is very important this work be done by a company that is thoroughly familiar with operations of emergency equipment. F.B. Hart Co. of Sacramento has such experience with repowering fire apparatus. Inquiries



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

January 2, 1981

FIRE DEPARTMENT

Page 2

made of other fire departments who have repowered through F.B. Hart Co. have produced only favorable comments (Santa Rosa has had three vehicles repowered through F.B. Hart Co.).

On January 31, 1980, F.P. Hart Co. quoted former Chief, Donald Cockayne, a price of \$28,167.00 to repower Engine 20X4 with a Detroit Diesel 8V-71 and Allison Automatic HT-740 FS. Due to smog regulations, it is now illegal in California to use a Detroit 8V-71 diesel for repowering. Del Schwieger of F.B. Hart Co. has quoted me a rough estimate of \$33,000.00 for repowering Engine 20X4 with the following equipment:

Engine - Detroit Diesel 6V-92

This engine cost about \$2,000.00 more than a 8V-71. The 6V-92 is also larger and has a slower top R.P.M.. This involves increasing size of the engine compartment on Engine 20X4, plus changing the pump drive gear ratio of our Hale Fire Pump.

Allison Transmission HT-740, 4 Speed.

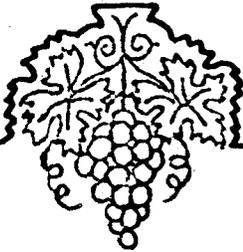
Del Schwieger of F.B. Hart Co. is doing a feasibility study to insure correct operation of all component units. Final conclusions and a more accurate cost figure should be ready by January 6, 1981. F.B. Hart lawyers are also checking on the possibility of a waiver on using the 8V-71 engine.

R & L Diesel Co. of Stockton has quoted a price of \$20,584.00 plus tax and labor for repowering with a 6V-92 Detroit Diesel and Allison Transmission. Joe Serta, owner of R & L Diesel Co., stated that they have had no previous experience of repowering fire engines, but could do the job.

By repowering Engine 20X4, we would have the equivalent of a new pumper that is now selling for about \$130,000.00, which should last for over 20 years. I recommend, upon the successful completion of the feasibility study, F.B. Hart Co. be allowed to repower Engine 20X4.

Donald N MacLeod
Donald MacLeod, Assistant Fire Chief

5865



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

January 2, 1981

FIRE DEPARTMENT

TO: Henry A. Glaves, Jr., City Manager

FROM: Donald MacLeod, Assistant Fire Chief

SUBJECT: Repair of Engine 20X4

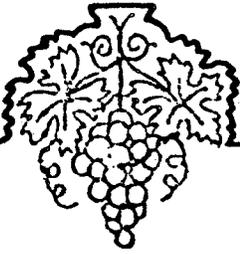
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By repowering Engine 20X4, we would have the equivalent of a new pumper that is now selling for about \$130,000.00, which should last for over 20 years. I recommend, upon the successful completion of the feasibility study, F.B. Hart Co. be allowed to repower Engine 20X4.

Donald M MacLeod
Donald MacLeod, Assistant Fire Chief

City of Lodi
Fire Dept

12/31/80

Attn. Donald McLeod

Dear Sir,

I have completed the research you requested on the possible repair and cost estimate of engine No. 4.

Due to the broken crankshaft of the 1091 cu. in. Hall Scott gas engine and past performance any repair should be a complete out of frame overhaul. However, I have found the parts needed to complete the job are no longer available.

I also talked to Mr. Davidson of Bay Engine who is the only supplier I know of in the area. He stated that if the parts were available he estimates the cost would be close to \$15,000.

My recommendation at this time would be a complete repower of a new late model diesel engine and Allison Automatic Transmission

Sincerely
Stew E. Zimbleman

SPECIALTY MOBILE MAINTENANCE
435 Louie Avenue
Lodi, California. 95240
Phone (209) 368-0235



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

FIRE DEPARTMENT
January 31, 1980

To: Mr. Henry A. Graves, City Manager
From: Don Cockayne, Fire Chief
Subject: Repowering Eng. 20 X4

This is an update on my requests of July 1978 and December 1978 to repower Eng. 20X4 with a diesel engine and automatic transmission (copies enclosed). As you will recall, Eng. 20X4 is presently powered with a 1091 cubic inch Hall-Scott gasoline engine with a standard transmission. The two newer engines (20X5 and 20X6) are powered with Detroit Diesel 8V-71N engines with automatic transmissions.

For a comparison, here is what was spent for repairs to the three engines since 1-1-79:

Eng. 20X4	\$3,849.00
Eng. 20X5	405.00
Eng. 20X6	216.00

These costs do not include tires, lubrication or general maintenance. Among the major repairs that have been made on Eng. 20X4, are:

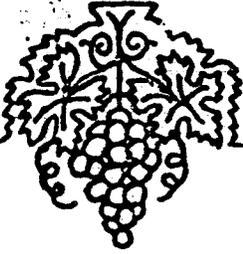
Replace differential	\$1,678.00
Replace water pump	598.00
Overhaul alternator	241.00
Replace air tank	161.00
Replace foot brake and spring	178.00
Replace fuel pump	105.00
Overhaul carburetors	327.00
Repair drive line	72.00
Replace 3rd member gasket	88.00

In addition to these repairs, the clutch was replaced in December 1978 at a cost of \$320.00.

Parts for this engine are becoming increasingly more difficult to obtain. We had to go to a wrecking yard to find a used carburetor for parts.

I spoke with Mr. Del Schwieger, Parts and Service Manager for F.B. Hart Company, Sacramento, California, and he quoted me the following:

Detroit Diesel 8V-71 with Allison Automatic HT740FS transmission	-- \$28,167.00
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CITY OF LODI

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FIRE DEPARTMENT

They just repowered an engine for Manteca Fire Department at this price.

Another important factor to consider, is that this engine was out of service for repairs for over 275 hours, last year. As for our reserve pumpers, one is 28 years old and the other is 24 years old, and therefore not too reliable.

In view of the past experience of troubles we have had with Eng. 20X4, I would urgently request that this pumper be repowered as soon as possible. We have had very good performance with the other two pumpers that are equipped with the Detroit Diesel 8V-71 engines and the Allison Automatic HT740FS transmission and therefore I would recommend that Eng. 20X4 be repowered with this same combination.

It is very important that this work be done by a company which is thoroughly familiar with operations of emergency equipment and has had much experience with repowering of such equipment. Therefore I would recommend that F.B. Hart Company of Sacramento do this work in the very near future.



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

FIRE DEPARTMENT

December 18, 1978

To: Henry A. Graves, City Manager
From: Don Cockayne, Fire Chief
Subject: Repairing of Eng #20X4

I have recently talked to the Fire Chiefs or the Mechanics of the fire departments that had used Hall-Scott engines in their fire apparatus. Here are the results of these talks:

Bakersfield - Repowered 4 or 5 with Detroit Diesel and Allison Auto. Transmissions

San Luis Obispo - Repowered with Detroit Diesel and Allison transmissions

Modesto - Problems with parts - Repowered 2 with Cummings Diesels

Redwood City - Changed over all to Detroit Diesel

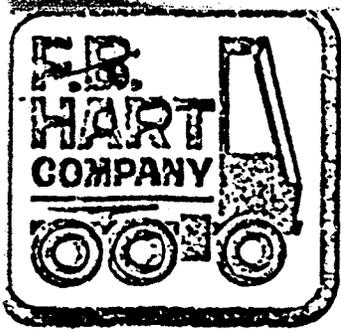
Woodside - Changed to Detroit Diesel

San Rafael - Repowering with Detroit Diesel and Allison Automatic Transmissions - problem with parts

Contra Costa Consolidated Fire District - Had a 3 Hall-Scotts-repowered with Cummings Diesel and Automatic Transmission

Most of the people I talked with said that the increased upkeep, unavailability of parts, and economy of operation were their main reasons for changing over to diesel engines.

I also spoke to Les Calkins about changing the gear ratio in the differential and was told that all that would do is give us more speed or less speed. It wouldn't effect the wear on the clutch.



December 8, 1978

TO: Lodi Fire Department

FROM: Del Schwieger, Parts and Service Manager
F. B. Hart Company
Detroit Diesel Allison Division

Below are some of the items to be taken into consideration when making a decision whether or not to repower a piece of equipment.

1. Engine

The Hall-Scott engine is obsolete. Internal parts are very hard to get. Some parts are not available at all and have to be manufactured.

It also becomes increasingly hard to maintain horsepower of your present engine.

2. Transmission

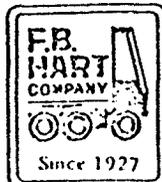
The transmission is obsolete as a unit. Some parts are still available,⁴ but for how long it is not known. Because of unreplaceable parts such as main drive gear, main drive cap and throw-out bearing collar, there is always the problem of clutch alignment. Clutch problems could turn out to be your number one cost of repair and down time.

3. Chassis

Other than your pumps the chassis should be in excellent condition. Rear axel, body and frame all get little abuse so you have a candidate for re-power.

We suggest, in your case, a Detroit Diesel BV71 Fire Pumper 350 HP at 2300 RPM. This is a special engine for fire pumers. It makes an excellent repower package and carries a five (5) year warranty, the same as a new truck.

1441 Richards Blvd.
Sacramento, CA 95807
Phone (916) 431-6151



2535 Ellis Street
Redding, CA 96001
Phone (916) 246-2460



CUMMINS, CATERPILLAR, DETROIT DIESEL ALLISON



Lodi Fire Department
December 8, 1978

We also suggest that you use a HT740 Allison Automatic transmission fire pumper special. This transmission is designed to be used in fire trucks. By a flip of a switch you can pump in fourth gear lock-up. With an Allison you have no clutch to worry about. It will also help your pump to last longer because there is no shift shock. Drive lines will last longer also.

The Allison transmission, like the engine, carries a five (5) year warranty.

Please study the attached information and if there are any questions, please call me.

DS/lo



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

FIRE DEPARTMENT

Dec. 20, 1978

F. B. Hart Co. Sacramento

Detroit Diesel 8V 71N with accessories
Allison Automatic Transmission HT740
with cooler and linkage

\$15,865.40 plus tax & labor

Repowered 1965 Van Pelt for Santa Rosa

\$22,351.32 plus Tax

Approximate total cost now

\$23,000.00 plus tax

H & L Diesel Trucks Stockton

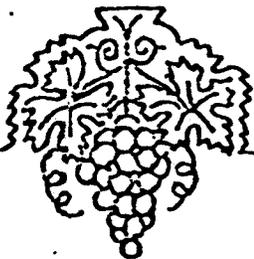
Detroit Diesel 8V 71N with accessories
Allison Automatic Transmission HT 740
with cooler & linkage

\$15,696.00 plus tax & labor

5 year or 100,000 miles

Eng. 4 hood 34 3/4 inches

Eng. 5 hood 33 1/2 inches



CITY OF LODI

HEADQUARTERS STATION / 210 W. ELM STREET, LODI, CALIFORNIA 95240

FIRE DEPARTMENT

July 7, 1978

To: Henry A. Glaves, Jr., City Manager

From: Don Cockayne, Fire Chief

Subject: Repowering Engine 20X4

I recently talked with you concerning the problems we have had with Eng. 4 and suggested that this engine be repowered with a Diesel engine and a five (5) speed Allison automatic Transmission. Eng. 4 was purchased in 1969 at a cost of \$44,500.00.

In the past year, we have spent about \$1,200.00 for repairs on this engine.

The present power plant in this engine is a Hall-Scott 1091 cubic inch gas engine with a manuel transmission. They no longer make Hall-Scott engines and parts are getting very scarce. At the present time, we need a rear main seal and a new clutch, which will cost approximately \$2,000.00.

To install a Diesel engine and automatic transmission will cost about \$25,000.00, but we would then have the equivalent of a new pumper that is now selling for about \$96,000.00, which should last for another 20 to 30 years.

I would strongly urge you to consider using some of the Federal Reserve Sharing Funds for this very important project.

I've talked with Don about this and his request makes sense in light of the problems he is having with the present power plant.

gum