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DEPT OF ENV PROTECTION
WEST PALM BEACH



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ADDENDUM

**FLORIDA TIRE RECYCLING, INC.
(9675 RANGE LINE ROAD, PORT ST. LUCIE, FL)**

**WASTE TIRE PROCESSING FACILITY
PERMIT RENEWAL APPLICATION
#WT56-165345**

PART III - ATTACHMENTS:

A. FACILITY DESIGN:

1. Attached as Exhibits A and B are: an aerial/topographic map of the facility including the surrounding area for one mile; a zoning land use map which is not more than one year old showing land use and zoning within one mile of the facility.

2. Attached as Exhibits C and D are: a plot plan of the facility on a scale of 1" = 100'; a drainage plan and detail sheet. These together present:

(a) The facility design, including the location and size of all storage and processing areas for used tires, unprocessed waste tires, processed waste tires and waste tire processing residuals.

(b) All wetlands and other bodies within the facility or within 200' of the any storage area.

(c) Storm water control measures including ditches, dikes and other structures.

(d) Boundaries of the facility, legal boundaries of the land containing the facility, and any easement or right-of-way within the facility or within 200' of any storage area.

(e) Location, size and depth of all wells. Within the facility within 200' of any storage area or wet detention area within the facility.

(f) All structures and buildings that are constructed at the facility.

(g) All areas that are used for loading and unloading.

(h) All access roads and internal roads, including fire lanes.

(i) Location of any fence, gate or other access control measures.

(j) There is no disposal area within the facility.

B. FACILITY OPERATION:

1. The facility receives all waste and resalable tires by several means: (1) using its own equipment as well as that of a contract hauler (SKW LEASING, INC., a fully licensed collector) the facility collects tires from tire dealers, etc. throughout the State; (2) across its scale waste tires collected by others who are licensed by FDEP as waste tire collectors.

Once collected, the tires are examined to identify and isolate those tires which are fit for reuse as resalable tires or as casings for recapping. These are set aside and sold to used tire dealers and recap facilities with which the Company has ongoing relationships. Those tires which are not fit for resale or reuse are directed toward one of five waste tire processing machines where they are shred on a just-in-time basis to a 1" and/or 2" fuel size chip. Waste tires which are not shred as they arrive will be stored in accordance with rule 17-711.540 (1) F.A.C. (see Exhibit C).

The Company has a purchase order from GEORGIA PACIFIC CORPORATION to supply this material for use as fuel. The residuals or that portion of the shredded material which cannot be sold as fuel is transported by Company vehicles or contract haulers (currently RELIABLE WOOD PRODUCTS, an FDEP licensed hauler) to: (a) CHAMBERS WASTE SYSTEMS OF FLORIDA where it is used as daily cover; (b) ORANGE WASTE, RECYCLING & MATERIALS, INC. a licensed Class III landfill where it is buried.

It should be noted, that some of the resalable waste tires (approximately 30 tons) are stored inside the building in compliance with rule 17-711.540 (2) F.A.C.

2. The Company owns and operates five waste tire processors each of which has a capacity of 10 tons per hour (see below for a list of equipment and appendix for manufacturers data sheets):

- A. MAC SATURN #1: Serial #30267/6240; Model #6240HT
- B. MAC SATURN #2: Serial #6TB05088; Model #3406BDIORT
- C. COLUMBUS McKINNON #1: Serial #6DA02638; Model #SR4
- D. COLUMBUS McKINNON #2: Serial #23204734; Model #3508
- E. COLUMBUS McKINNON #3: Serial #06VF200576; Model #80637416

3. As described in Section 1, the waste tires are processed to a 1" and/or 2" chip which is used as fuel by companies operating in the pulp and paper industry. That portion of the material that contains too much wire (approximately 20%) is landfilled either at CHAMBERS WASTE SYSTEMS OF FLORIDA, INC. or ORANGE WASTE, RECYCLING & MATERIALS, INC.

4. The maximum daily throughput operating on an 8 hour day for the five machines identified above is: 8 hours x 10 tons = 80 tons x 5 machines or 400 tons per day. Since the processing equipment is operated 6 days per week (note collection occurs on only 5 days per week) the Company has the capacity to process 1,200 tons per week or 62,400 tons per year with equipment currently owned and operated. Since the facility operates 3 shifts with several of the waste tire processors, this throughput analysis is conservative.

5. See the attached Exhibit E for a description of the methodology to be employed in maintaining the storage requirements of 17-711.540 F.A.C.

6. Please see Exhibit F for a copy of the Emergency Preparedness Manual which includes a statement of the on site and off site locations where the manual will be maintained (one in the main office at the location; the second at the president's home, on 19050 Glades Road Port St. Lucie, FL).

7. Please see Exhibit G for the Fire Safety survey.

8. As described in Section B1 and B3, all tires collected or brought to the facility will be processed on that day or the day following; therefore, there will be little whole tire storage area required. All material brought to the site will be processed and sold either as fuel or in the case of residuals will be landfilled.

C. CLOSING PLAN:

See Exhibit H for the completed closing plan as required for Rule 17-711.700 (2) and (3) F.A.C.

D. FINANCIAL RESPONSIBILITY:

See attached Exhibit I for proof of financial responsibility as required by 17-711.510 (2). It is understood as the result of the Stipulation signed by FLORIDA TIRE RECYCLING, INC. and the FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION dated January 13, 1994 that the Trust Fund established for the benefit of the Department to cover the Cost of Closure will not initially be adequate to provide full financial assurance. Nonetheless, beginning in August, 1994 FTR will contribute monthly at least \$4,000 to this fund until such time as FTR achieves the required level of funding to cover the then Cost of Closure.

E. AUTHORIZATION FOR LAND USE:

FLORIDA TIRE RECYCLING, INC. is the land holder of record.

F. WASTE TIRE CONSUMPTION:

No waste tires will be consumed at the facility.

G. PERMIT FEE:

A check in the amount of \$1250.00 made payable to the FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION is enclosed as the fee required in 17-4, F.A.C.

EXHIBIT E

COMPLIANCE WITH 17-711.540: STORAGE REQUIREMENT

A) Since the site receives waste tires from the public, a sign has been posted at the entrance of the site stating the operating hours, the cost of disposal and site rules.

B) No operations involving the use of open flames are conducted within 25' of a waste tire pile.

C) An attendant is present when the site is open for business; when not open a Class D security guard is present.

D) Fire protection services have been assured through notification to local fire protection authorities. The Fire Department has conducted a number of surveys (see Exhibit G St. Lucie County/ Fort Pierce fire safety survey) and the FDEP consultant, Mr. Ed Spahn, has also conducted a survey which is in the possession of FDEP.

E) FTR has prepared an Emergency Preparedness Manual (see Exhibit F). This manual was updated in May, 1994 and includes: (1) a list of names and numbers of people to be contacted in the event of fire or any other emergency; (2) a list of the emergency response equipment at the site and methodology of use; (3) a description of procedures to be followed in the event of a fire including procedures to contain and dispose of the oily material potentially generated by the combustion of large numbers of tires.

F) The operator will immediately notify the Department in the event of fire or other emergency which poses an unanticipated threat to public health or environment. Within 2 weeks of any emergency, the operator of the site will submit to the Department a written report on the emergency. This report shall describe the origins of the emergency, the actions that were taken to deal with the emergency and the results of the actions that were taken and a analysis of the success/failure of the actions.

G) The operator of the site currently maintains records of the quantity of waste tires received at the site, stored at the site and shipped from the site. It should be noted that FTR and the FDEP have agreed to accept an estimate at this time of the amount of material stored at the site.

H) FLORIDA TIRE RECYCLING, INC. is the owner of the site and therefore needs no additional authorization.

I) Communication equipment is maintained at the site to assure that the site operator can contact local fire protection authorities in case of fire. This equipment includes a mobile cellular telephone.

J) Appropriate insect, rodent and other pest control measures are undertaken at the site in conjunction with the County Pest Control staff.

K) The approach and access road (a County Highway - Route 609) to the waste tire site is kept passable for any motor vehicle at all times.

L) Waste tires which are resalable and which may be stored indoors are stored according to the following standards: (1) tire piles are not more than 50' in width, and along walls are not more than 25' in width; (2) the width of the main aisle between the tire piles is 8'; (3) the clearance from the top of the pile to the roof structure exceeds 6'; (4) there are no heaters in the building; (5) the tires are not stored against walls that are adjacent to warehouse areas or between manufacturing and warehouse areas; (6) waste tires are not stored over 15' high; (7) there are no automatic sprinkler systems installed.

M) There is an attendant or a Class D security guard in place at all times. In addition there are control gates and natural barriers at the perimeters of the property.

N) The waste tire site is not constructed or operated within 200' of a natural or artificial body of water, including wetlands within the jurisdiction of the Department except bodies of water contained completely within the property boundaries of the site and which do not ordinarily discharge from the site to surface waters (see MSSW permit part of Exhibit D). Storm water control methods meet storm water requirements of Chapter 17-25 and 17-330, F.A.C. as applicable (see Exhibit D). The site is managed in such a way as to divert storm water around and away from storage piles (see MSSW permit application and Exhibit D).

O) Outdoor waste tire piles have dimensions which are no greater than the following: 50' x 200' x 15' high (Exhibit C).

P) A 50' wide fire lane is placed around the perimeter of each outdoor waste tire pile and access to the fire lane for emergency vehicles is unobstructed (Exhibit C).

Q) Access to the site is controlled through gates and natural barriers.

R) The site is bermed (Exhibits C & D).

S) The site is kept free of grass, brush and other potentially flammable vegetation.

T) The temperature of waste tire piles stored more than 8' high does not exceed 300°.

U) Residuals will be managed so as to be contained on site and will be disposed of in a permitted solid waste management (see above Section B-3).

V) The facility maintains its own fire battalion with 2 all wheel drive fire trucks one of which is foam equipped.

EXHIBIT F

EMERGENCY PREPAREDNESS MANUAL

for

**FLORIDA TIRE RECYCLING, INC.
9675 Range Line Road
Port St. Lucie, FL 34987**

A copy of this manual is to be kept on file
in the office at 9675 Range Line Road as well
at the home of Susan K. Wilson, President
19050 Glades Road Port St. Lucie, FL

Revised 05/24/94

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- I. Persons to Notify in the Event of Fire or Other Emergency
- II. Types of Emergency
- III. Procedure to Follow for Fire
- IV. Emergency Response: Plan, Equipment and Use
- V. Clean Up of Oil Residue

I. PERSONS TO NOTIFY IN EVENT OF FIRE OR OTHER EMERGENCY

ST. LUCIE COUNTY-FT. PIERCE FIRE DEPARTMENT 9-1-1
FIRE DEPARTMENT ADMINISTRATION OFFICE 467-2300

PAUL GRIFFIS OPERATIONS MANAGER HOME 466-1059
MOBILE 595-7895
PAGER 871-3871

SUSAN K. WILSON PRESIDENT HOME 595-1953
MOBILE 595-7902
MOBILE 595-7900

PORT ST. LUCIE POLICE DEPARTMENT 9-1-1
871-5000

ALLIED UNIVERSAL (MIAMI TANK) CORPORATION 407-467-0105
407-554-9540
407-754-7067

FLORIDA EAST COAST RAILROAD (LOCAL DISPATCH) 800-342-1131
EXTENSION 2302

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
(SOUTHEAST DISTRICT) 407-433-2650

II. TYPE OF EMERGENCY

The primary emergency of special concern at FLORIDA TIRE RECYCLING, INC. is fire to the waste tire material located on the property.

Prevention and early detection is paramount to minimizing the effect of this event. FTR operates 7 days/week: 24 hours per day Monday-Friday and at least 12 hours per day Saturday and Sunday. Employees are trained to be ever vigilant to detect and report a fire. Each employee is informed as to the procedure to follow (see III) if fire is discovered.

During non-business hours, FTR's outside security force monitors the entire site. This force is equipped with a cellular augmented telephone system and is instructed to notify the St. Lucie County-Ft. Pierce Fire Department immediately upon detection of a fire and to follow the procedures in sections I and III.

III.

PROCEDURE TO FOLLOW FOR FIRE

1. **DIAL 911 to notify fire and police departments.** Tell them to respond to 9675 Range Line Road, off Glades Cut-Off Road ... give directions.
2. **SPREAD THE ALARM LOCALLY:** Notify all employees on job site... activate FTR's Quick Response Fire Battalion.
3. Remove customers and non-essential employees from the vicinity of the fire.
4. Notify resource list to provide additional equipment:

E & D TRUCKING COMPANY	407-461-0649
RINGHAVER OF PALM BAY	407-952-3001
TRIPLE E EQUIPMENT	407-597-4862
5. Call FDEP at once: 407-433-2650

IV.

EMERGENCY RESPONSE EQUIPMENT AND USE

FTR maintains a Quick Response Fire Battalion under the supervision of its foreman, Paul Griffis. This fire team is trained in the use of equipment which includes: (a) 2 self contained six wheel drive, all terrain 1000 gallon fire tank trucks one of which is equipped with foam and which can reach any area of the property on the currently installed roads in any weather conditions; (b) 2 six yard front end loaders, 1 two and one half yard front end loader; (c) 2 twenty yard end dumps; (d) miscellaneous hose and hand tools.

In the event of fire, and at the same time the St. Lucie County-Ft. Pierce Fire Department is contacted, one front-end loader will be dispatched immediately to the adjacent business, ALLIED UNIVERSAL CHEMICAL/MIAMI TANK, where it will hook to the rail cars and tow them out of harm's way, approximately 200 yards down the spur track. FTR has secured permission from its neighbor, ALLIED UNIVERSAL CHEMICAL to execute this plan.

At the same time, the other loaders together with the Fire Battalion will be dispatched directly to the fire area itself. Once there, these individuals, specifically trained for this circumstance, will use the equipment to segregate and contain the fire material and apply water and foam as necessary with the goal of arresting within the first minutes any fire that might occur.

As time continues, the personnel and equipment will be used to continue to move or separate material from the rubber which is involved in the fire in order to prevent the ignition of additional material. The Battalion will also attempt to berm the fire area to prevent run off from spreading to other areas of the property.

When the loader that has been dispatched to move the rail cars has completed that task, it will return to assist the Fire Battalion, the other front end loaders and the 2 end dumps in removing unaffected material from the burn site and in berming the burn site to prevent the spread of run-off.

Once the St. Lucie County-Fort Pierce Fire Department arrives the management of the fire fighting effort will be turned over to them; then this plan in coordination with and at the direction of the Department will be implemented. FTR's equipment together with additional resources (see above in Section III. 4 - bulldozers, loaders, dump trucks) and personnel will be available to the Fire Department for further containment and/or suppression.

Management will provide a containment pond/lake on the property for use by the Fire Department and adequate to supply a minimum of 510,000 gallons.

V. CLEAN UP OF OIL RESIDUE

In the event that oil residue is developed, after the fire is extinguished, any earth/soil which may be contaminated by such residue is to be removed to a properly permitted disposal site by contractors licensed to carry hazardous material.

Scanned
10-25-2010

E X H I B I T G



St. Lucie County - Ft. Pierce
Fire District

P. O. Box 3030
2400 Rhode Island Ave.
Fort Pierce, FL 34948
(407) 467-2312
Fax (407) 467-2325

June 7, 1994

Mr. Skip Robinson
Florida Tire Recycling, Inc.
9675 Range Line Road
Port St. Lucie, FL 34987

Dear Mr. Robinson:

At your request Deputy Chief Sessoms and I responded to Florida Tire Recycling on June 7, 1994.

It was obvious that there has been a great reduction in the amount of shredded tire piles located on this property. Deputy Chief Sessoms also visited your site on June 1, 1994. At this time there were some concerns pertaining to the water supply. This has been temporarily corrected until final water distribution plans have been installed. Deputy Chief Sessoms also advised that there was a very noticeable reduction in the tire piles from June 1, 1994 to June 7, 1994.

The St. Lucie County-Ft. Pierce Fire District appreciates the actions of Florida Tire Recycling, Inc. to eliminate this hazard.

Sincerely,

ST. LUCIE COUNTY-FT. PIERCE
FIRE PREVENTION BUREAU

Perry Sessoms
Deputy Chief Perry Sessoms
Fire Marshal

Fred D. Vaughn
Captain Fred D. Vaughn

cc: Chief Paul C. Haigley
Deputy Chief Barry Irwin
Janet Bowman, FDEP Attorney
Joseph Lurix, FDEP Engineer
Files

EXHIBIT H

**FACILITY CLOSING PLAN AS REQUIRED
BY RULE 17-711.700 (2) and (3) F.A.C.**

At the time the applicant's facility is to be closed, the applicant will:

1. Stop public access to the site.
2. Post a notice indicating that the site is closed and giving the phone number of the County Solid Waste Authority.
3. Notify the Department and County government of the closing.
4. Remove all waste tires and residuals to a waste tire processing facility, solid waste management facility authorized to accept waste tires, a legitimate user of waste tires for TDF, a used tire dealer or recap facility.
5. Since the facility does not process or collect any other solid waste beyond waste tires, there is no additional solid waste beyond that which is identified in #4 to be removed.
6. Notify the Department when closing is complete.
7. At the time of closing the applicant will contact those contractors that have submitted bids (see closure cost estimate) to close the facility and to begin the implementation of the closure process.
8. As part of the removal of all solid waste (see above) the applicant will clean and scrape the stabilized areas used for above ground processed tire material storage. This process will remove any remaining contamination or threat to public health or the environment.
9. It is anticipated that closure activities will require 90 days from the date operations cease.
10. Proof of financial assurance is submitted as Exhibit I in the form of a Trust Agreement already submitted to and accepted by the Department.

In accordance with 17-711.510 F.A.C., FLORIDA TIRE RECYCLING, INC. submits the following estimate for the Cost of Closure for its facility at 9675 Range Line Road Port St. Lucie, FL.

1.	Post notice of closure at an alternate disposal site.	\$ 250.00
2.	Notify the FDEP and the Board of County Commissioners of St. Lucie County.	\$ 30.00
3.	Remove resalable waste tires to retreading or resalable locations.	\$ 0.00
4.	Dispose of processed waste tires at an FDEP permitted landfill (ORANGE WASTE, RECYCLING & MATERIALS)	
a.	Loading at \$1.00 per ton x 30,000 tons (see Triple E - Exhibit J)	\$ 30,000.00
b.	Transportation at \$7.60/ton x 30,000	\$ 228,000.00
c.	Disposal at ORANGE WASTE, RECYCLING, & MATERIALS \$8.00/ton x 30,000 (see RELIABLE/ORANGE WASTE Exhibits K & L)	\$ 240,000.00
	SUB-TOTAL	\$ 498,280.00
5.	Clean and scrap stabilized areas used for above ground storage of processed tires.	\$ 17,650.00
	TOTAL	\$ 515,930.00

STATE OF FLORIDA

SOLID WASTE MANAGEMENT FACILITY TRUST FUND AGREEMENT TO DEMONSTRATE CLOSURE AND/OR LONG-TERM CARE FINANCIAL ASSURANCE

TRUST AGREEMENT, the "Agreement," entered into as of FEBRUARY 8, 1994
Date

by and between FLORIDA TIRE RECYCLING, INC.,
Name of the Owner or Operator

a FLORIDA CORPORATION (the Grantor),
Name of State Insert "corporation, partnership, association, or proprietorship".

and FIRST NATIONAL BANK & TRUST COMPANY, A NATIONAL BANK LOCATED AT: US #1,
Name and Address of Corporate Trustee

AND COLORADO AVENUE, PO BOX 9012, STUART, FL 34995-9012 (the Trustee.)
Insert "incorporated in the State of _____" or "a national bank"

WHEREAS, the Florida Department of Environmental Regulation (FDER), an agency of the State of Florida, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a solid waste management facility shall provide assurance that funds will be available when needed for closure and/or long-term care of the facility,

WHEREAS, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.
- (c) The term "FDER" means the Florida Department of Environmental Regulation, an Agency of the State of Florida or any successor thereof.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A.
On Schedule A, for each facility list the FDER GMS Identification Number, name, address, and the current closure and/or long-term care cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund (the Fund) for the benefit of the FDER. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the FDER.

Section 4. Payment for Closure and/or Long-Term Care. The Trustee shall make payments from the Fund as the FDER Secretary shall direct, in writing, to provide for the payment of the costs of closure and/or long-term care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the FDER Secretary from the Fund for closure and long-term care expenditures in such amounts as the FDER Secretary shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the FDER Secretary specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and
- (c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Power of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or a State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Secretary of the FDER a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the FDER Secretary shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, FDER Secretary, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the FDER Secretary to the Trustee shall be in writing, signed by the FDER Secretary, or the designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the FDER hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the FDER, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the FDER Secretary by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the FDER Secretary, or by the Trustee and the FDER Secretary if the Grantor ceases to exist.


Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the FDER Secretary, or by the Trustee and the FDER Secretary, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the FDER Secretary issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

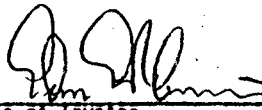
Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Florida.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers, duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written.



Signature of Grantor



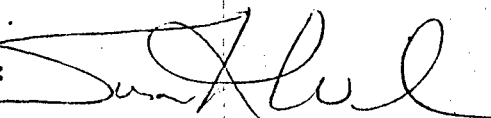
Signature of Trustee

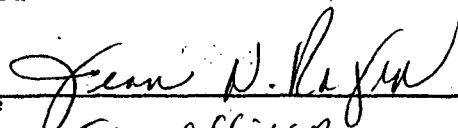
PRESIDENT

Title

V.P. + L.S.O.

Title

Attest: 

Attest: 

Title
TAX OFFICER

SECRETARY

Title

Seal

Seal

BELOW ARE EXAMPLES OF THE FOUR REQUIRED ATTACHMENTS THAT MUST ACCOMPANY A TRUST FUND AGREEMENT. THEY ARE ONLY EXAMPLES OF FORMATS ACCEPTABLE TO THE DEPARTMENT. THEREFORE, VARIATIONS CONTAINING THE REQUIRED INFORMATION ARE ALSO ACCEPTABLE.

**CERTIFICATION OF ACKNOWLEDGMENT FOR
SOLID WASTE MANAGEMENT FACILITY TRUST FUND AGREEMENT**

State of FLORIDA

County of ST. LUCIE

On this 02/08/94, before me personally came SUSAN K. WILSON
Date Owner or Operator

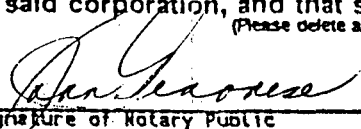
to me known, who, being by me duly sworn, did depose and say that she/he resides at

19050 GLADES ROAD PORT ST. LUCIE, FL 34987
Address

that she/he is PRESIDENT of
Title

FLORIDA TIRE RECYCLING, INC., the corporation described in and which
Corporation Name

executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.
(Please delete all references to a corporate seal if one does not exist for your corporation)

 02/08/94
Signature of Notary Public Date

seal
NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. MAY 2, 1995
BONDED THRU GENERAL INS. UND.

SCHEDULE A

This Agreement demonstrates financial assurance for the following cost estimate(s) for the following facility(ies):

Indicate closure and/or long-term care for each facility

FDER GMS- I.D. No.: 5156P00818

COST ESTIMATES:

NAME: FLORIDA TIRE RECYCLING, INC

Closure

\$ AS PER THE STIPULATION
ENTERED JANUARY 14, 1994,
SECTION 10F (ATTACHED)

ADDRESS: 9675 RANGE LINE ROAD.

Long-Term Care \$

PORT ST. LUCIE, FL 34987

Total

SCHEDULE B

The Fund is established initially as consisting of the following property:

CHECK NUMBER 6988 PAYABLE TO FIRST NATIONAL BANK AND TRUST IN THE AMOUNT
List the property used to establish the trust fund (e.g. (check # _____ in the amount of \$ _____ T.))

OF FIFTY THOUSAND (\$50,000) DOLLARS.

EXHIBIT A

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing and signed
by one of the following persons:

SUSAN K. WILSON

Name

PRESIDENT

Title

Name

Title

Name

Title


RECEIPT
FLORIDA TIRE RECYCLING, INC.
IRREV. TRUST DTD.2/8/94

RECEIVED FROM FLORIDA TIRE RECYCLING, INC. CHECK #006988 IN THE
AMOUNT OF \$50,000.00, REPRESENTING THE INITIAL DEPOSIT TO THE
FLORIDA TIRE RECYCLING, INC. IRREVOCABLE TRUST DATED FEBRUARY 8,
1994.

DATED THIS 9TH DAY OF FEBRUARY, 1994

FIRST NATIONAL BANK AND TRUST
COMPANY OF THE TREASURE COAST

BY


EDGAR E. ROBERTSON, VICE
PRESIDENT AND SENIOR TRUST
OFFICER

APPROVED THIS 14th DAY OF FEBRUARY,
1994.



PRESIDENT
FLORIDA TIRE RECYCLING, INC.

EXHIBIT J
TRIPLE E
Equipment Sales Corp.

835 Plain St.
Marshfield, MA 02050
Tel: (617) 837-9601
Fax: (617) 837-9621

25301 S.W. Martin Hwy.
Okeechobee, FL 34974
Tel: (407) 597-4862
Fax: (407) 597-4865

MR. Skip Robinson
Florida Tire Recycling, Inc
9675 Range Line Road
Port St. Lucie, Fl 34986

May 20, 1994

Dear Mr. Robinson,

Please find below our proposal to perform the work at your facility which we discussed recently.

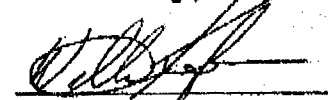
Supply labor and equipment to load
tire shreds \$ 1.00/ton
(minimum to cover set up - \$750.00)

Supply labor and equipment to scrape
and leave clean ground on which tire
shreds are stored (disposal by others) \$ 17,650.00

Should you accept our proposal and require these services,
we would require a 10% deposit to mobilize the necessary equipment
to your site. Billing will be monthly and due upon presentation.

Thank you for the opportunity to quote on this work.

Sincerely,


William Keefe

RELIABLE WOOD PRODUCTS, INC.

P.O. Box 217 • 1245 West Hwy 50
Winter Garden, FL 32787
Telephone (407) 656-9766

May 25, 1994


Mr. Skip Robinson
Florida Tire Recycling, Inc.
9675 Range Line Road
Port St. Lucie, FL

Dear Skip,

This is to confirm that Reliable Wood Products, Inc. (D.E.R. #939) is hauling shredded tires to 545 Clay & Landfill, which is a designated tire disposal site. We are hauling at the current rate of \$190.00 per load.

Please call me if you have any questions.

Sincerely,




Jack M. Reiner, Jr.

JMR/bb



ORANGE WASTE

EXHIBIT L

Orange Waste, Recycling & Materials, Inc. 877-0701
426-8252

May 25, 1994

Mr. Skip Robinson
Florida Tire Recycling, Inc.
9675 Range Line Road
Fort St. Lucie, Florida 34987

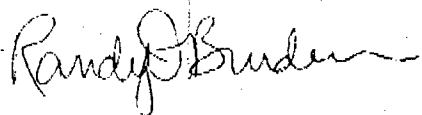
Dear Skip:

As per our conversation, please accept this communication as written confirmation of the rate of \$8.00 per ton for shredded tires.

Should you require any additional information or if I can be of further assistance please let me know.

Sincerely,

ORANGE WASTE, RECYCLING & MATERIALS, INC.



Randy O. Burden
President

ROB/rt

APPENDIX

- I. SATURN SHREDDERS**
- II. THE CM TIRE SHREDDER**
- III. STIPULATION**



201 East Shady Grove Road • Grand Prairie, Texas 75050

Phone: (214) 790-7800 • FAX: 214-790-8733

MEMO TO: Florida Department of Environmental Regulation

RE: Pending Permit Number: WT 53-224860

Saturn Shredder Division of MAC Corporation, located in Grand Prairie, Texas manufactured a mobile tire shredding unit for Florida Tire Recycling, Incorporated in May of 1988. That unit has been operated by said concern since delivery to Florida on or about 2 May 1988. The units' theoretical operating capacity is 1,000 auto tires per hour or its equivalent weight factor of approximately 10 tons per hour. This shredder should be operated on a normal 8 hour day basis by two (2) workers.

We trust the above information will suffice from us at this time. The undersigned can be contacted by interested parties as the manufacturer's representative.

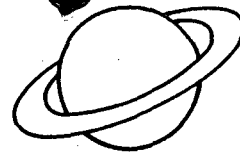
Respectfully submitted,

Norm Kramer

NORM KRAMER
Assistant to the President

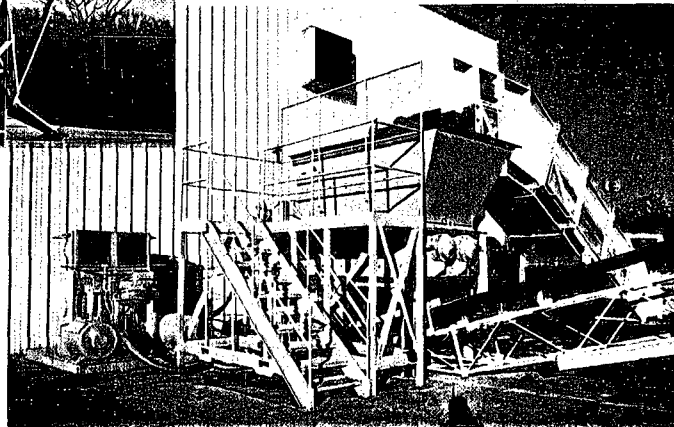
NK/ska

SATURN



BY
MAC

SHREDDERS



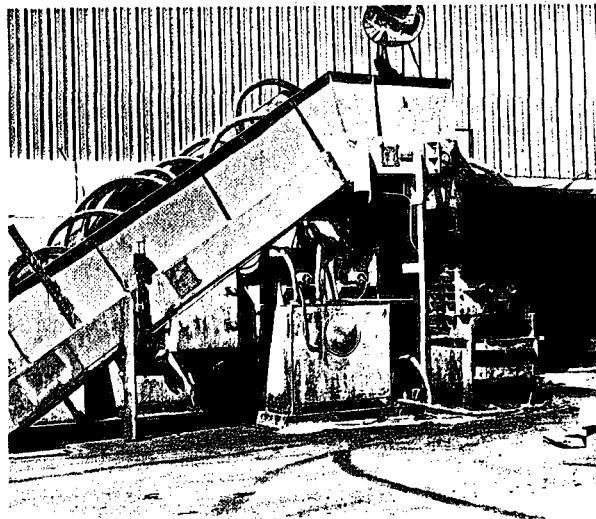
FOR ALL YOUR SHREDDING NEEDS!

SATURN SHREDDERS

BY MAC

NON FERROUS METALS

Aluminum, magnesium and copper scrap size reduction utilizing a Saturn Model 62-40HT. Higher Torque, larger diameter shafts and wider gears make the new "HT Series" shredders the best choice for reducing cable, wire, tubing, sheet, extrusions, castings, etc. for granulation and/or melting.



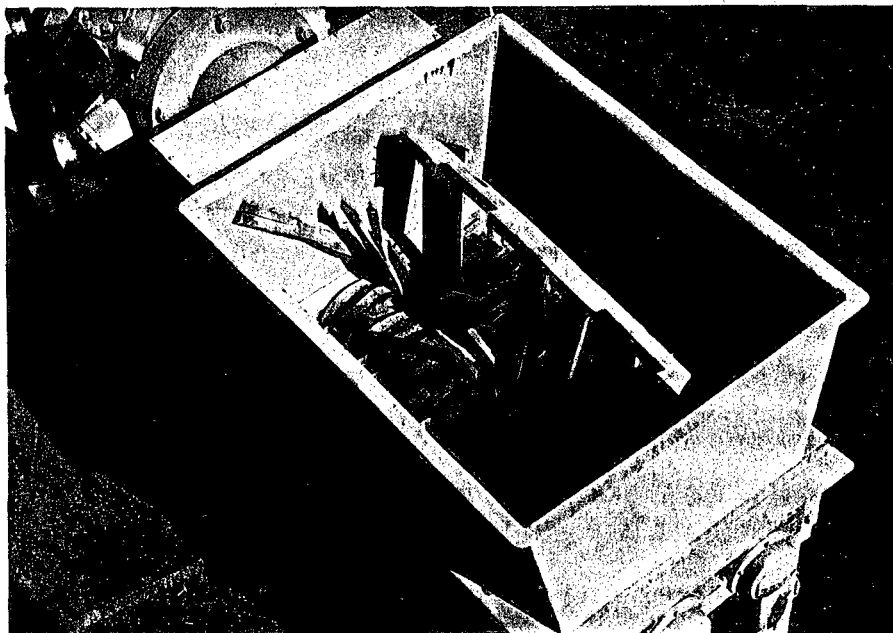
SOLID WASTE (MSW)

Municipal solid waste is processed as received from packer trucks in this Saturn Model 72-50 Mobile Shredder. MSW and bulky household waste are conveyed to the hopper by a metal belt infeed conveyor. The material is then shredded and discharged from an adjustable height conveyor. Saturn provides stationary or mobile systems with single source responsibility.



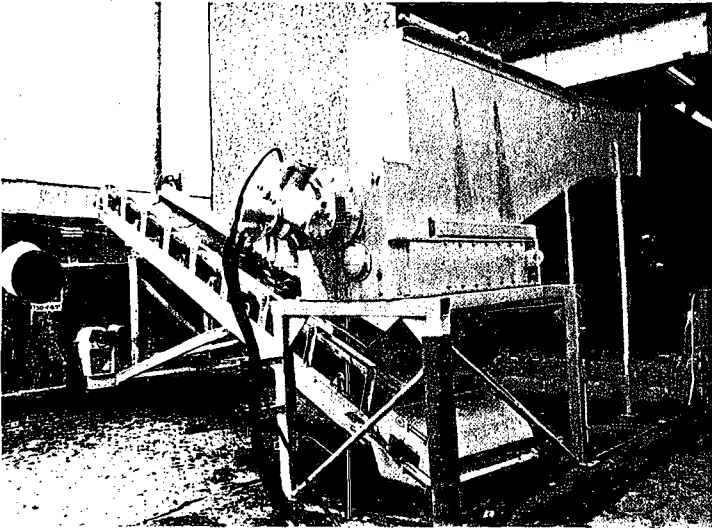
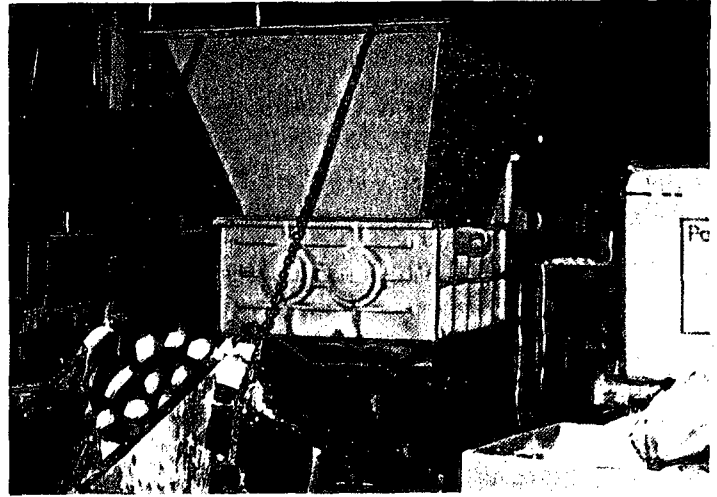
WASTE-TO-ENERGY

Saturn provides complete systems to shred and convert pallets and other in-plant solid wastes into usable boiler or furnace fuel. Through fast, cost efficient size reduction, incineration is improved and storage problems eliminated.



PLASTICS

Drools, flashings, purgings, and chunks of plastic are pre-processed to a uniform size suitable for secondary high speed grinding. Sawing and guillotining are virtually eliminated with Saturn's Rotary Shear Shredders. Other benefits include increased throughput capacity, more efficient downstream operation, and improved metal detection capabilities.



IN PLANT...

Automobile and truck tires are reduced in this Saturn Shredder prior to landfill disposal. This system for a major manufacturer insures complete destruction of warranty adjustments and blemished tires, including tough steel belted radials. Saturn offers shredders starting with the Model 52-32HT that will process whole truck tires.



...AND MOBILE

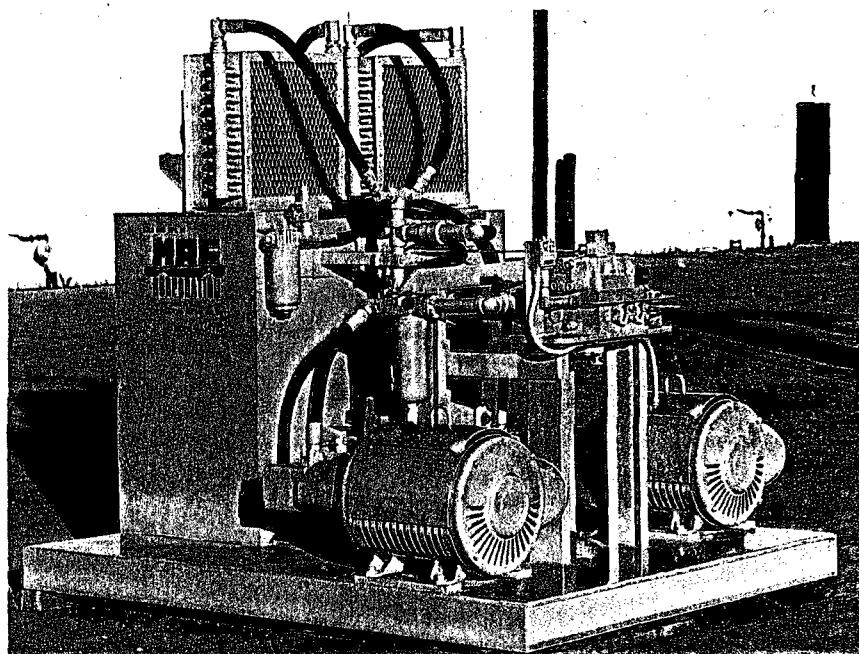
Saturn's Mobile Tire Shredder prepares tires for disposal at a major landfill. Saturn Mobile Shredders offer greater versatility along with conveyor in-feed and discharge for greater thru-put and ease of operation. Saturn Shredders are also used to prepare tires for use as a fuel supplement.

SATURN SHREDDERS

BY
MAC

HYDRAULIC DRIVE

Saturn's hydraulic drive design, low cutting speed and high shaft torque significantly reduce costly repairs from self destruction damage commonly associated with high speed shredders.



SHREDDER SIZES

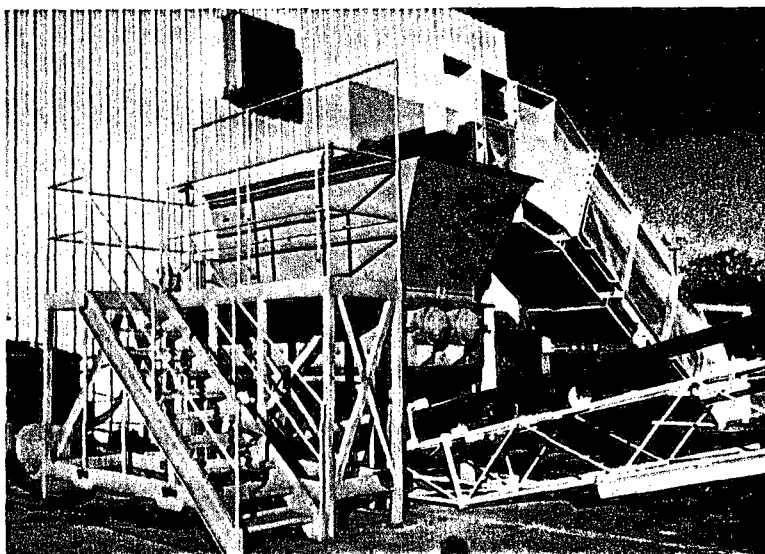
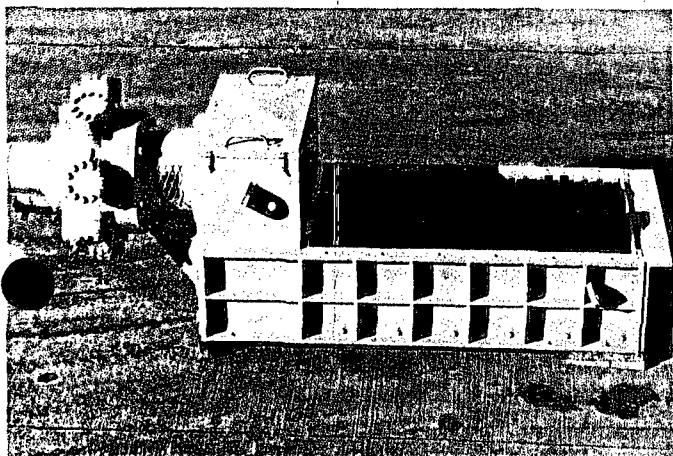
Shredder inlet feed openings are suited to each processing system requirement. Inlet openings range in length up to 96" and up to 50" in width. Shredder size is determined by system design requirements and available space.

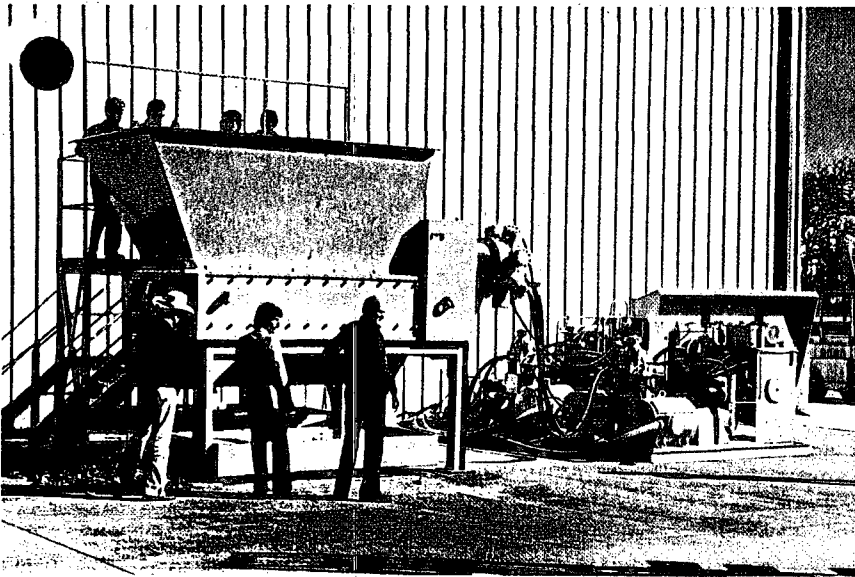
Saturn's patented Hydraulic Power Package is designed to provide the proper drive system to fit any need. Hydraulic Power Packages provide instant automatic reversing for anti-jamming capability. Size and horsepower of hydraulic units range from 50 HP to 600 HP. Chemical duty and explosion proof designs are available.

HIGH TORQUE

Saturn's low speed, high torque radial piston hydraulic motors provide the correct torque for optimum shredder performance. Motors vary in size up to a maximum of 19,520 foot-pounds of torque per motor.

Saturn offers conveyors for all types of systems, including a complete line of both steel and rubber belt conveyors. Strength, durability and versatility are all proven assets of the Saturn conveyor line. Saturn's experienced engineers can design and integrate an effective, economical conveyor system for virtually any facility.





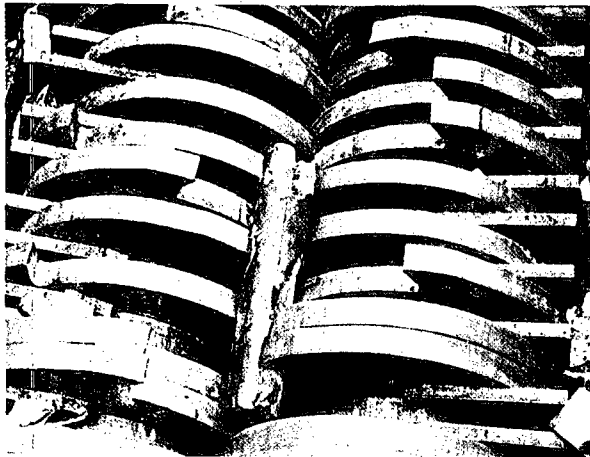
TEST FACILITIES

A modern, on-site test facility enables Saturn to evaluate customer requirements prior to the purchase of a Saturn Shredding System. Product samples can be conveyed, shredded and magnetically separated for analysis. If the customer is unable to attend the test in person, a complete test report with photographs or video tape will be provided.

All Saturn Shredders are pre-tested prior to shipment to the customer.

CUTTERS

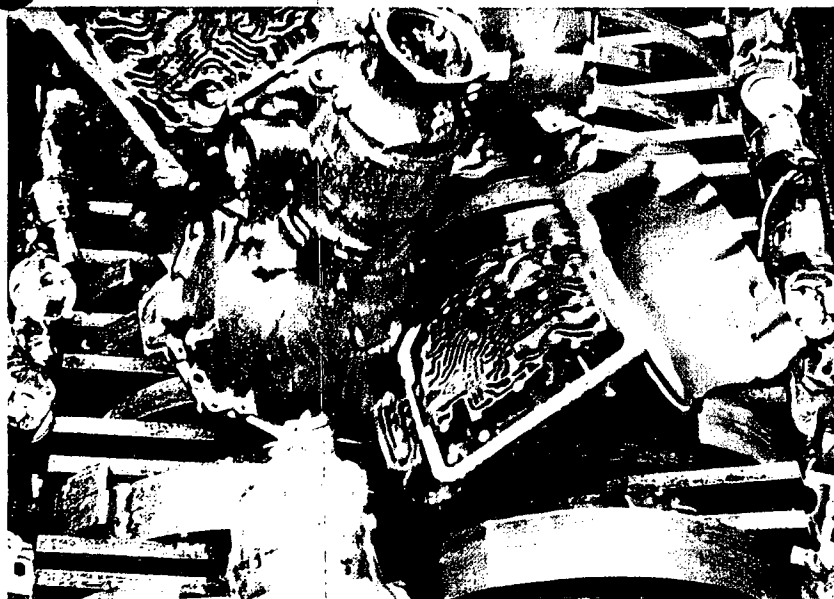
Saturn Shredder cutters can be mounted in various configurations to meet specific needs for end-product sizing and through-put. Note 2" and 4" arrangement shown.



PORTABLE MODELS

Portable shredders are completely self-contained to service transfer stations, collection sites, remote landfills and multiple plant sites. Saturn's mobile systems reduce most solid wastes including wood, metal, paper, tires, cable, polycarbonates, etc., for recycling, energy generation or disposal. These self-sufficient models feature a diesel-hydraulic powered shredder, optional hydraulic crane with grapple, plus a discharge conveyor with winch for lowering or raising it to the desired angle.





ALUMINUM

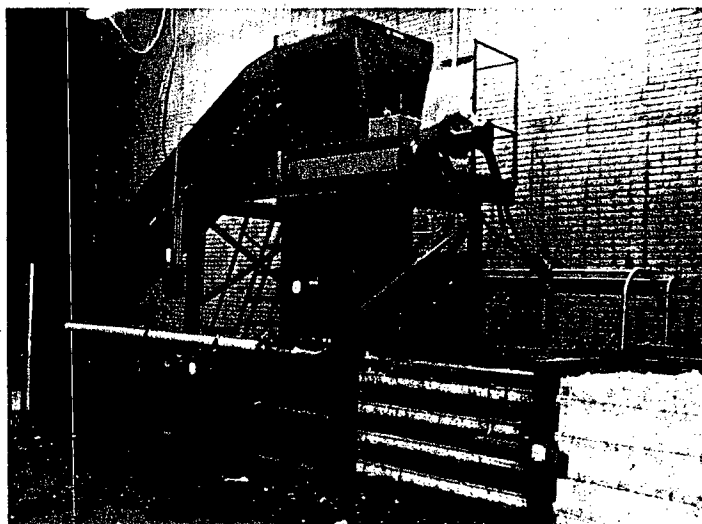
Aluminum transmission cases are shredded in Saturn's Model 72-50, which is designed for heavy industrial and large volume municipal or bulky waste shredding.

- ★ Patented hydraulic drive system
- ★ Rotary shear cutting action
- ★ Low-speed, high-torque shredding
- ★ Non-jamming instantaneous reversal

PAPER

Saturn Model 36-22 used for product security destruction prior to sale of paper bales to pulp mills.

- ★ Minimum noise, dust and energy requirements
- ★ No troublesome materials sorting
- ★ Low initial cost and maintenance
- ★ No expensive mounting foundations



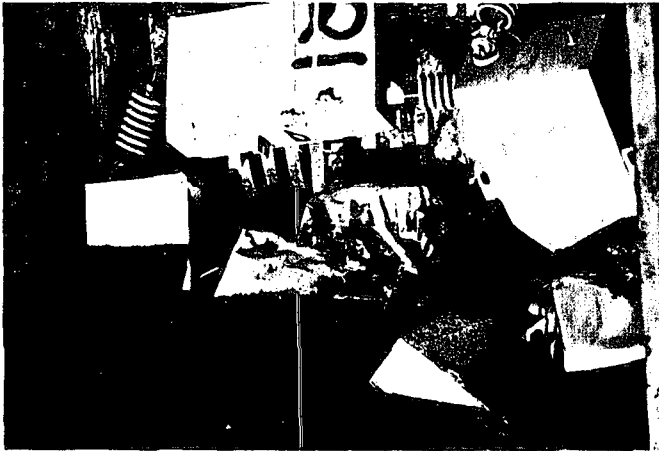
SATURN SHREDDER DATA

MODEL NUMBER	POWER	CUTTER SURFACE AREA	OVERALL (LxWxH)	★ESTIMATED WEIGHT (POUNDS)
36-22	75 HP	36"x22"	75"x30"x16"	8,000
44-26	100 HP	44"x26"	98"x34"x31"	11,000
52-32HT	150 HP	52"x31"	121"x44"x40"	18,000
62-40HT	200 HP	61"x38"	136"x52"x44"	28,000
72-46HT	300 HP	72"x45"	139"x68"x50"	38,000
72-50HT	400 HP	72"x50"	150"x78"x48"	46,000
96-50HT	400 HP	96"x50"	174"x78"x48"	52,000
96-50HT	600 HP	96"x50"	180"x78"x48"	56,000

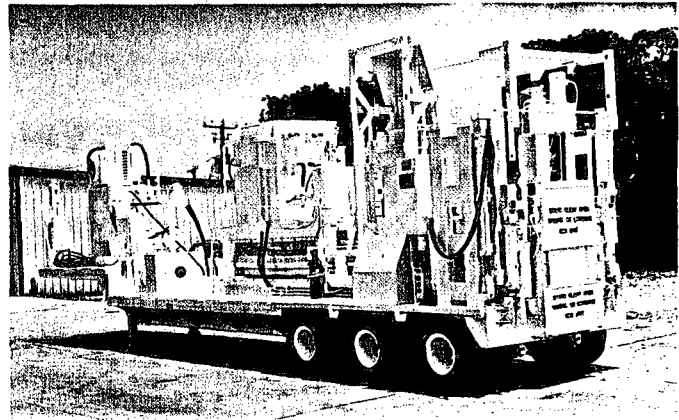
COMPLETE MOBILE SYSTEMS AVAILABLE IN MOST MODELS

★ Weight without Hopper, Stand or Fluids.

HAZARDOUS AND LOW RAD WASTE



PCB capacitors are shredded prior to incineration process.



The Saturn High Density Compaction System allows on-site shredding and compaction of low level activated waste (LLAW) at nuclear power plants.

MAC/Saturn offers a full line of stationary in-plant, or portable equipment for shredding contaminated materials at hazardous waste sites or pre-processing incineration facilities.

Typical applications include:

HAZARDOUS

- ★ DRUMS
- ★ PCB CAPACITORS
- ★ MISC. DEBRIS AT HAZARDOUS WASTE CLEAN-UP SITES:
Wood, Plastic, Metal,
Concrete, Dirt, etc.

LOW LEVEL ACTIVATED WASTE

- ★ HEPA FILTERS
- ★ CONSTRUCTION/DEMOLITION DEBRIS
- ★ CLOTH (CANVAS, RAGS, CLOTHING)
- ★ PLASTIC SHEETING, BUCKETS
- ★ PALLETS
- ★ PVC PIPES & TUBES
- ★ METAL (DRUMS, WIRING, ETC.)
- ★ WOOD
- ★ CONCRETE

BULKY WASTE

Tree waste, industrial waste, furniture, mattresses, construction and demolition debris are all processed in Saturn's larger 300HP and 400 HP machines. Volume reduction of up to 6:1 is typical in these applications. Shredders can be fed by crane/grapple, front end loader or infeed conveyor. Saturn can also provide high speed grinders if additional size reductions is required for composting.



TOTAL SYSTEM DESIGN AND SERVICE



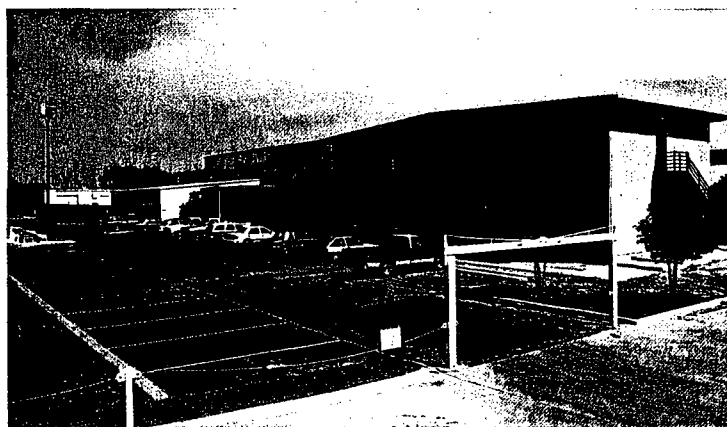
Saturn offers a complete line of shredding equipment to handle virtually any waste reduction requirement. Based on test runs in our on-site test facilities, our engineers will design a system specifically for your material. With Saturn's patented hydraulic drive and automatic anti-jamming capabilities, troublesome materials are readily reduced without stress on shredder or shredder drive system.

Our service department offers trained technicians available on 24 hour notice. Most replacement parts are available for immediate delivery. Saturn shredders are available in many sizes, in mobile or stationary designs, and with either electric-hydraulic, or diesel-hydraulic power.

SATURN SHREDDERS

For All Your Waste Reduction Needs!

- ★ IN-PLANT WASTE AND ENERGY RECOVERY
- ★ HAZARDOUS AND NUCLEAR LOW RAD
- ★ SOLID WASTE (MSW)
- ★ PALLETS AND WOOD PRODUCTS
- ★ TIRES AND RUBBER PROCESSING
- ★ FERROUS AND NON FERROUS MATERIALS INCLUDING DRUMS, WIRE CABLE, ETC.
- ★ BATTERY PROCESSING
- ★ PRODUCT DESTRUCTION
- ★ PLASTIC PRODUCTS AND SCRAP



CENTRAL LOCATION

Saturn's facilities, located seven (7) miles from the Dallas/Ft. Worth Airport, are easily accessible from any part of the country. Parts and service can be at your location in a minimal amount of time.

—Sales and Service—

MAC Corporation and SATURN SHREDDERS

(214) 790-7800 FAX 214-790-8733

201 East Shady Grove Road
Grand Prairie, Texas 75050



MA 5/88-10

©1988 MAC Corporation of America

THE CM TIRE SHREDDER

The CM Tire Shredder...the most productive tire shredder in the industry

The CM Tire Shredder is the fastest, most efficient, most productive shredder on the market... because it's the *only* one engineered specifically to cut whole tires, even steel belted radials, in just one step.

In one hour, it can shred as many as 1000 car tires or 300 truck tires. That's up to 15 tons of tires per hour.

The 2" x 2" nominal chips that result are the ideal size for tire derived fuel, replacement of aggregate and other applications.

With further reduction, tires can be recycled for rubber asphalt and rubber-plastic compounds.

When mounted on our exclusive tri-axle lowboy trailer, the CM Tire Shredder is completely mobile.

so you can move it easily from site to site. It can also be ordered as a stationary unit.

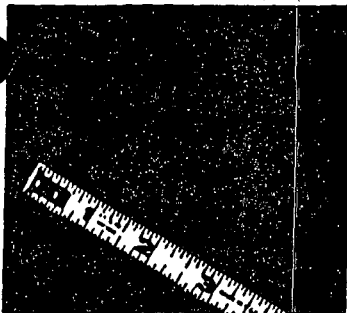
Easy operation. The CM Tire Shredder is designed for simplicity. With minimal training, its operation can be handled by as few as three people.

Efficiency. At an average of 28¢ per tire – including labor, maintenance, energy and depreciation – the CM Shredder costs less to operate than competitive machines. Yet, at up to 15 tons per hour, its output is about 30% greater than other shredders.

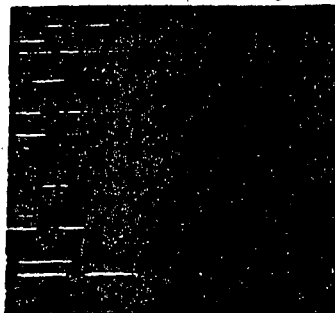
Mobility. Mounted on an exclusive tri-axle lowboy trailer specially designed by CM, the Shredder can be transported readily from site to site. This mobility allows you the flexibility to bid on jobs wherever you choose, increasing your revenue potential substantially.

Revenue generator. You can expect customers to pay tipping fees ranging from 60¢ to \$1.50 per tire for disposal. Additional revenue can be earned when chips are sold for fuel or other applications.

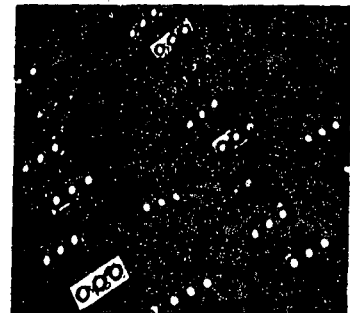
Typical chip



Classifying system



Steel knives



Multi-purpose classifying system. The system is designed to recycle larger chips until they are reduced to the desired size. Classifier can also be rolled out of the way quickly, allowing you to create 2" wide hoops or strips ideal for landfills.

New 1" x 1" classifier.

Continuing our efforts to satisfy industry needs, we at CM have adapted our original patented 2" x 2" classifier to produce 1" x 1" chips. Existing CM Tire Shredders can be retrofitted easily with our new 1" x 1" classifier.

Three production rates

Single pass	22 - 24 tons/hour
2" x 2" chip size	8 - 12 tons/hour
1" chip size	4 - 6 tons/hour

Two-speed drive allows selection of most efficient cutting shaft speed: 20 rpm for car tires, 10 rpm for truck tires.

2.0 HOW THE SHREDDER OPERATES

This section describes how the CM Tire Shredding System operates and illustrates components so operators and maintenance crews can become familiar with the nomenclature.

2.1 System Description

The CM Tire Shredding System is a heavy-duty, electromechanical system that cuts all types of passenger and truck tires up to 48" diameter into 2 X 2-inch chips. Figure 2-1 explains the nomenclature used: Figure 2-2 is a cutaway view to show the operating features.

The system consists of (1) electrical control system, cutting box and classifier mounted on a structural steel frame. (2) A 36" x 21.5' input conveyor with 8' extension, and (3) A 30" x 8' horizontal output and a 24" x 30' inclined output conveyor with 1.5 trough.

Operators load onto the input conveyor which transports tires to the cutting box. Mounted on the input conveyor frame are two infrared sensors shown in Figure 2-3. The first detects oversized loads and the second counts the number of tires entering the cutter. If the oversized load detector senses a load larger than will pass through the cutting box, the input conveyor automatically shuts down. After clearing the overload, the operator restarts the input conveyor from the Control Panel or the pushbuttons on the conveyor. Operation is discussed fully in Section 3. The tire counter keeps track of how many tires pass into the cutting box, showing the total on the

control panel.

Note:

This infrared sensor "reads" the gap between tires. When the tires are loaded so that they touch, the sensor under counts. To maintain an accurate count, a gap of 4" is required.

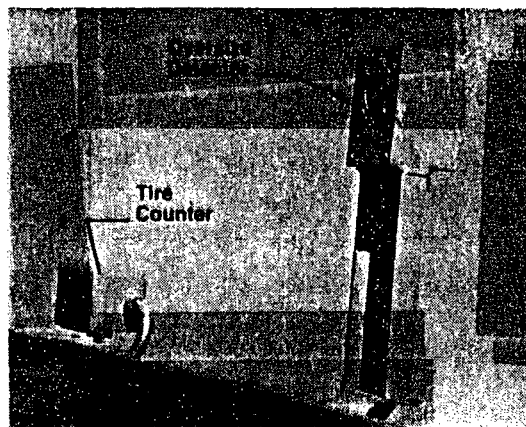


Figure 2-3. Oversize load and tire counter sensors.

The counterrotating infeed rollers compress and align the tires as they enter the cutting box. High-alloy, heat-treated knives are mounted on two shafts that counterrotate inward to provide a scissors-like high-torque, low-rpm cutting action. Each shaft assembly has 12 rows of 14 knives. These high-alloy knives are designed for long life and easy replacement by removal of three heat-treated bolts.

The cut chips fall through the bottom of the cutting box onto rotary classifiers (Figure 2-4) that segregate chips requiring recut from those that have reached the 2" X 2" nominal size. The smaller chips fall directly through the bottom of the classifier onto the output conveyor.

CM Tire Shredding System

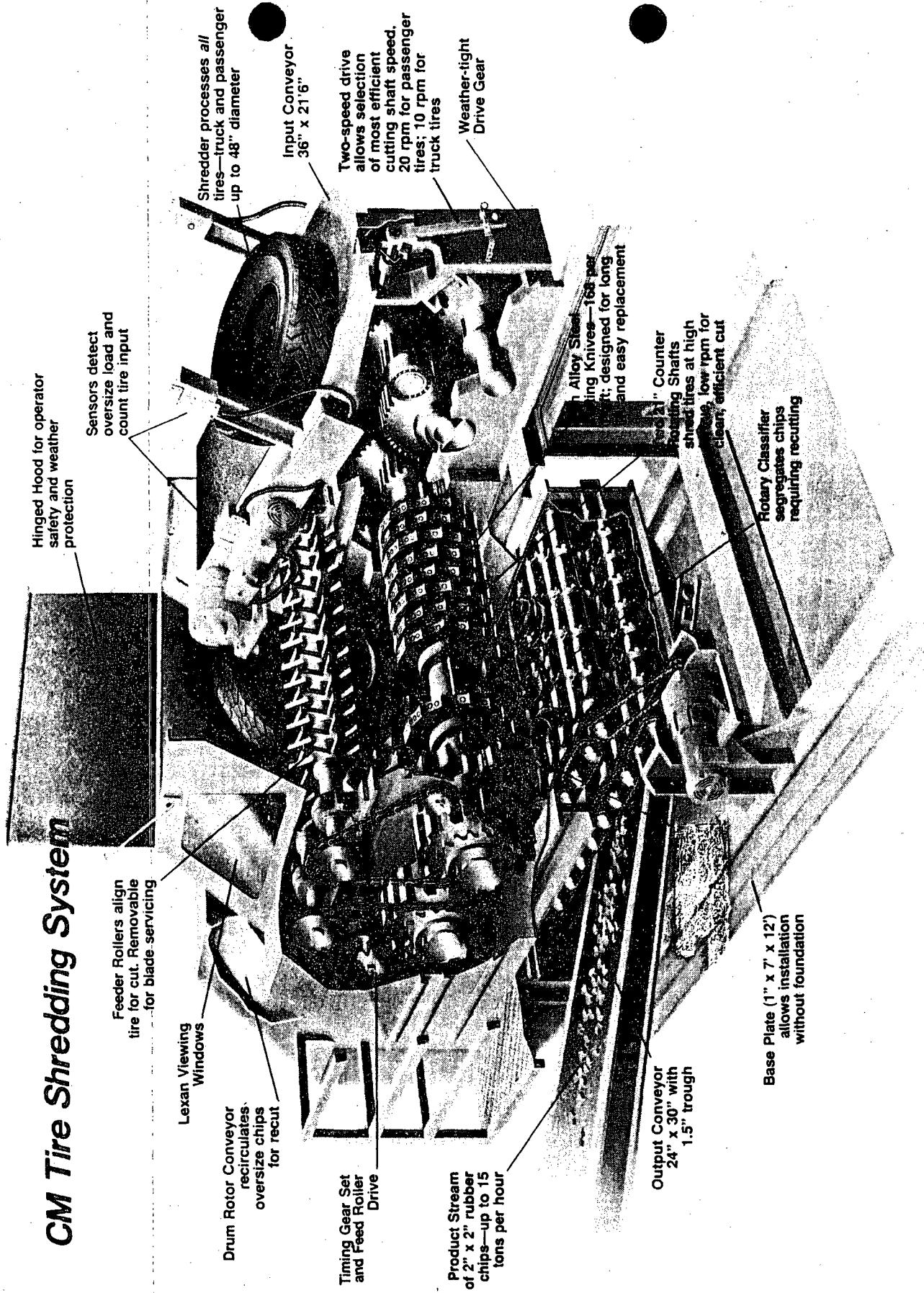


Figure 2-2. Cutaway of CM Tire Shredder.

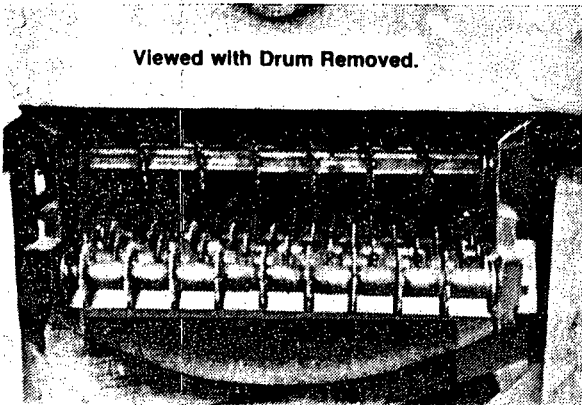


Figure 2-4. Rotary classifiers

The classifier consists of two sections -- first, a 3" section directly beneath the cutting box with a 2" section under the 3" classifier. If 2" X 2" chips are not required as an output, either or both sections of the classifier can be removed. Oversize chips are worked into an 8-foot rotating drum which carries them to the top of the cutting box for another pass through the shredder. The output conveyors move the stream of cut chips out of the shredder.

The CM Tire Shredder is powered by 250 hp, AC drive motor which transmits power to a Dodge gear reducer through a rotary coupling. Shear pins at this coupling prevent damage in case of a jam.

The main drive gears offer a choice of two gear ratios through a pinion arrangement. The high ratio provides 20 rpm for fast cutting of passenger tires; the low ratio, 10 rpm, is required for cutting truck tires and, of course, can be used for a mixture of truck and passenger tires. Selection of the ratio is made manually at the lever arm on the side of

the gear housing (Figure 2.5). Electrical lockouts and sensors prevent operation unless the shredder is fully in gear and provide status indication on the control panel.

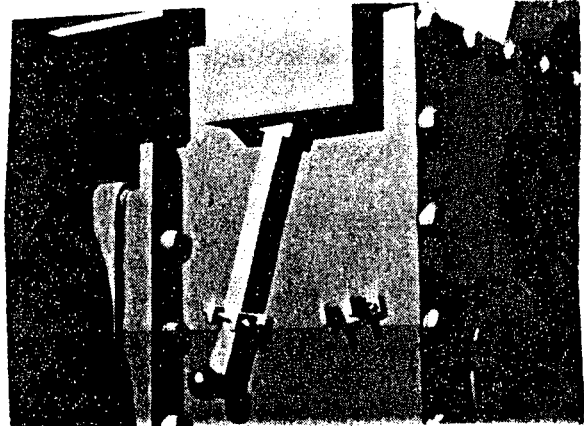


Figure 2-5. Gear ratio selection lever.

Infeed rollers to compress and align tires as they enter the cutting box are driven by a chain drive powered from the main cutting shafts. These infeed rollers are readily removable so that the cutting knives may be serviced.

For Maximum lubrication, both the main drive gears and the infeed roller chain drive run in covered oil bath. Grease manifolds are provided for lubrication of main and feed shafts and classifier bearings.

The electrical control components are housed in a weather-proof enclosure. This panel provides the operator with status information as well as a means for operating the systems. The control box (Figure 2-6) also offers ground fault protection. For operator safety, an electrical interlock shuts the shredder down when the protective cover of the cutting box is opened if the machine is in the operating

mode. All moving parts to which operators could be exposed -- the drive gears, the infeed drive and the rotating shaft and coupling at the drive motor -- are covered with shields.

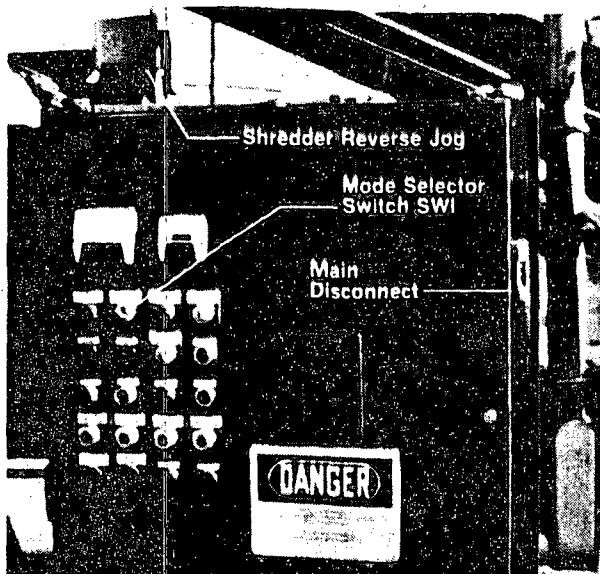


Figure 2-6. Electrical control enclosure.

2.2 Electrical Operation

This section explains electrical functioning of the shredder. This material is required for service personnel but operating crew need not be familiar with it.

The Shredder control system includes--

* **Shredder Control Panel** -- This panel contains the main shredder controls and indicators (See Section 3 for full descriptions of the controls and indicators). The Control Panel (Figure 2-6) is mounted in a waterproof NEMA 4 enclosure that is equipped with ground fault protection.

* **Manual Gear Selector** (Figure 2-5)--This lever allows the operator to select either LOW GEAR (10 rpm) or HIGH GEAR

(20 rpm) operation. Proximity switches at the selector arm lock out electrical operation unless the drive gear is properly engaged.

* **Five EMERGENCY stops:** two on the input conveyor (one each side), one on the gear side of the shredder, the fourth on maintenance jib mast and the fifth on the control panel.

* **SHREDDER REVERSE JOG switch** used during cutting knife change only is mounted above the control panel.

2.2.1 Functional Description

Functionally, there are two modes of shredder operation. The START SEQUENCE NORMAL mode is used for normal cutting operation, while the START SEQUENCE BYPASSED mode is used for maintenance. The basic difference between the modes is that when using BYPASSED mode, the normal start sequence interlocks are bypassed and the separate motors can be individually controlled. This mode selector, SW1, is identified on Figure 2-6. Figure 2-7 provides a functional diagram of the START SEQUENCE NORMAL mode of operation.

When the MOTOR CONTROL POWER is switched on, power is applied to the electrical control circuits via the motor control power relay. The shredder motor circuit is the first one energized, by pressing either the SHREDDER MOTOR FORWARD or SHREDDER MOTOR REVERSE control. The output conveyor circuit is the next to be energized in the normal start sequence. When the OUTPUT CONVEYOR control has been pulled out, power is applied to

the output conveyor motor starter, starting the output conveyor and enabling the classifier.

Note

The SHREDDER MOTOR REVERSE control is normally used only for maintenance and in clearing jams.

With the classifier circuit enabled, pulling the CLASSIFIER control out applies power to the classifier on circuit, which enables the drum on circuit. With this circuit enabled, pulling out the DRUM control applies power to the drum on circuit, which enables the input conveyor circuit. The input conveyor circuit is the final circuit to be energized in the normal start sequence. With the conveyor circuit enabled, pulling out the INPUT CONVEYOR control applies power to the input conveyor motor starter.

The remaining function circuits are the counter and the oversize sensor. The counter simply counts the number of tires processed by the shredder. The oversize sensor determines if too high an object (approximately 16") is being fed into the shredder. When an oversized object is sensed, the input conveyor is shut down. The object must be removed from the sensor line-of-sight before the input conveyor can be restarted.

All of the shredder motors (output conveyor, classifier, drum motors and main drive) are protected from overload damage by devices that will remove power to specific motor.

2.2.2 Circuit Descriptions

The circuits are described in start sequence order.

MAIN POWER is applied to the motor circuits via circuit breaker (ICB). The circuits are protected by a ground fault relay. If a ground fault condition exists, the GROUND FAULT RELAY (6CR) will trip (ICB). Main Power is applied to the motors via line fuses and thermal overload devices. Main Power is coupled to the electrical control circuits via a stepdown transformer.

START SEQUENCE NORMAL/BYPASSED switch (1SW), is used to bypass the normal start sequence interlocks and enable individual motor operation for maintenance purposes. With the START SEQUENCE control in the BYPASS position, power is applied to relay 1CR and START SEQUENCE BYPASSED indicator, (1LT).

MOTOR CONTROL POWER keyswitch, (2SW), is used to apply power to the control circuits. If the CONTROL POWER ON indicator is lit, power is applied to each of the remaining control circuits.

The shredder can be started in either direction. The JOG functions on the enclosure door are operational. The JOG REVERSE switch (9SW) on top of main enclosure is functional only when the input guard is up.

The SHREDDER MOTOR should be started before the output conveyor, classifier and drum motors are energized. The shredder motor will not start unless the manual gear selector is fully engaged in either the

high (1PRS) or low (2PRS) gear position. In the high gear position, high gear control relay (4CR), is closed and HIGH GEAR indicator (9LT), is lit. In the low gear position, low gear control relay (5CR), is closed and LOW GEAR indicator (10LT), is lit. Relays (4CR) and (5CR) set up the required circuits for proper rotation of the shredder motor so that when the shredder START FORWARD

pushbutton is pressed the shredder knives will rotate in the proper direction required to shred tires.

With either the shredder forward or reverse motor starter energized, the input conveyor on circuit is fully enabled. Power is always applied to height and count circuits, even when the control power switch, (2SW) is OFF.

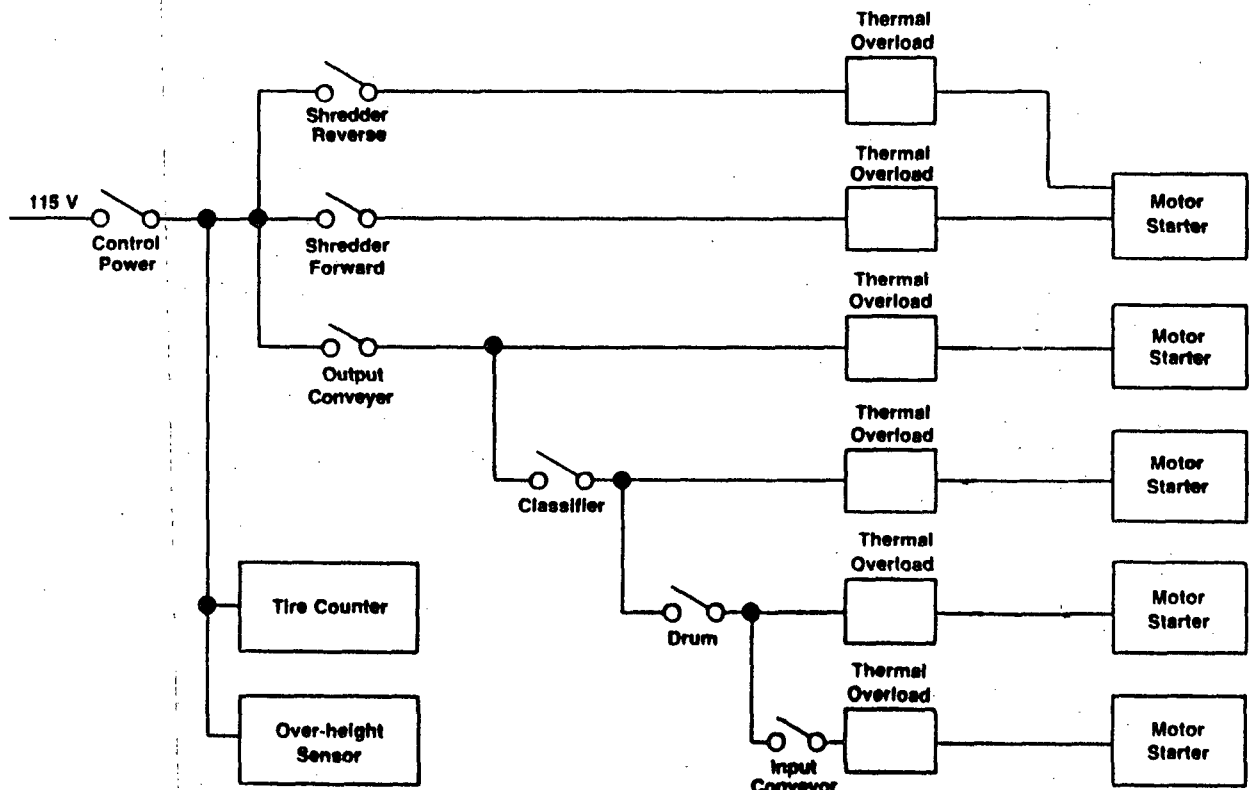


Figure 2-7. Shredder functional control diagram.

OUTPUT CONVEYOR pushbutton, (15PB) is used to apply power to the output conveyor on circuit. When the OUTPUT CONVEYOR control is momentarily pulled, power is applied to output conveyor starter (3M), and OUTPUT CONVEYOR ON indicator (5LT), starting the conveyor motors, (2MTR & 6MTR). Energizing the output conveyor starter also enables the classifier on circuit, when in START SEQUENCE, NORMAL MODE.

CLASSIFIER pushbutton (16PB), is used to apply power to the classifier on circuit. Momentarily pulling the classifier pushbutton applies power to the classifier motor starter (4MF), and the CLASSIFIER ON indicator (6LT), starting classifier motor (3MTR). Energizing the classifier on starter also enables the drum on circuit, when in START SEQUENCE NORMAL mode.

DRUM pushbutton (8PB), is used to apply power to the drum on circuit. Momentarily pulling out the DRUM pushbutton applies power to drum motor starter, (5MF), and DRUM on indicator, (7LT), starting drum motor, (4MTR). Energizing the drum motor starter also partially enables the input conveyor on circuit, when in the START SEQUENCE NORMAL mode.

A drum motor overload is sensed by a current relay (OLCR) which will disable the input conveyor circuit thus shutting down the input conveyor until the drum overload condition no longer exists. The input conveyor will then require restarting. It will not restart automatically.

INPUT CONVEYOR pushbutton (9PB), is used to apply power to the input conveyor on circuit. Momentarily pulling out the INPUT CONVEYOR pushbutton applies power to input conveyor motor starter (6MF), and INPUT CONVEYOR ON indicator (8LT), starting input conveyor motor (6MTR).

Five EMERGENCY STOP pushbuttons are installed in the electrical control circuit to shut down the entire shredder. These emergency stops are located on the control panel (1PB); on the frame below the gear box (2PB); on both sides of the input conveyor (10PB) and (14PB); and on the maintenance jib, (12PB).

Tire counter circuit consists of a modulated infrared emitter, a receiver, and a Durant counter. Each time a tire passes between the emitter and receiver, a pulse is sent to the Durant counter. This causes the counter to increment by one, thus accounting for each tire input to the shredder.

Tire Height Sensor consists of a modulated infrared emitter and a receiver. If the sensor is enabled (the shredder motor is energized), a too-large object passing between the emitter and receiver will cause power to be removed from only the input conveyor on circuit.