P&H Sistema Payload

P&H Payload Systems

- ✓ Payload
  - ✓ Unión de Desarrollos P&H/CRC
  - ✓ Feedback Típicos de Motores
  - ✓ Feedback de motor, Resolver, Modelos Sólidos
- ✓ Payload Load Pin (Plus)
  - ✓ Unión de Desarrollos P&H/CRC
  - ✓ Diseño P&H de Pin medidor de esfuerzo
  - ✓ Feedback de motor, Resolver, Modelos Sólidos (Excepto Hoist)
  - ✓ Reemplazo del Feedback de motor Hoist por Pin
  - ✓ Abierto para futuras Tecnologías
    - ✓ AC Payload, Diggability, Strain-Gauge
    - ✓ Payload AC, habilidad de Excavación , Medidor de esfuerzo

Sistema Payload

Puntos Claves

- ✓ Preciso Sistema de pesaje
- ✓ Exacta Descomposición de Ciclo
- ✓ Calibración Simplificada
  - ✓ Cambio de cables de Levante (Límites)
  - ✓ Paquetes de Cambio Dipper y Desgaste
    - ✓ Calibración de limites Multi Punto con Laser
    - ✓ 10 Ciclos de Excavación Vacios para Calcular Tara
    - ✓ Calibración Dinámica mejorada con Laser Incorporado
- ✓ Integrado al Sistema Centurion
- ✓ Transferencia de Datos, Tendencias y Reportes
- ✓ Disponible como Retrofit

Sistema Payload Pin de Carga

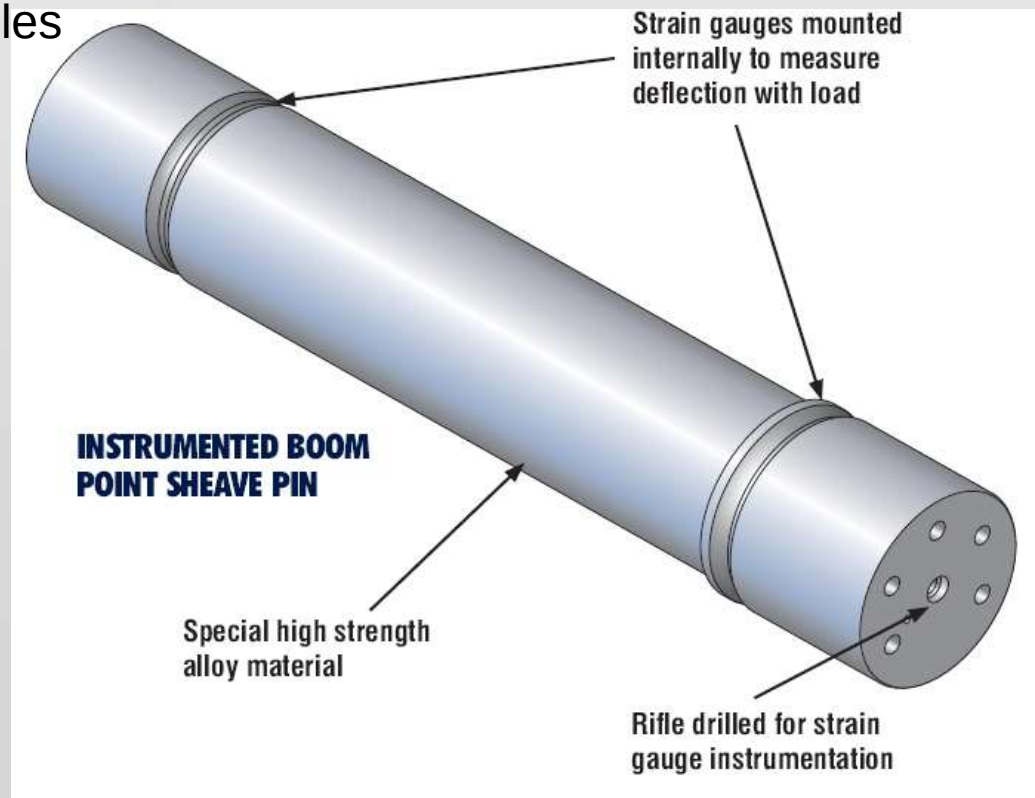
Puntos Claves

- ✓ Preciso Sistema de pesaje
- ✓ Exacta Descomposición de Ciclo
- ✓ Calibración Simplificada
  - ✓ Cambio de cables de Levante (Límites)
  - ✓ Paquetes de Cambio Dipper y Desgaste
    - ✓ Calibración de limites Multi Punto con Laser
    - ✓ 10 Ciclos de Excavación Vacios para Calcular Tara
    - ✓ Calibración Cinemática mejorada con Laser Incorporado
- ✓ Integrado al Sistema Centurion
- ✓ Transferencia de Datos, Tendencias y Reportes
- ✓ Futuro uso tecnológico con Pin (AC)
- ✓ Disponible como Retrofit

Payload Pin de Carga

Pin Medidor de Esfuerzo Payload

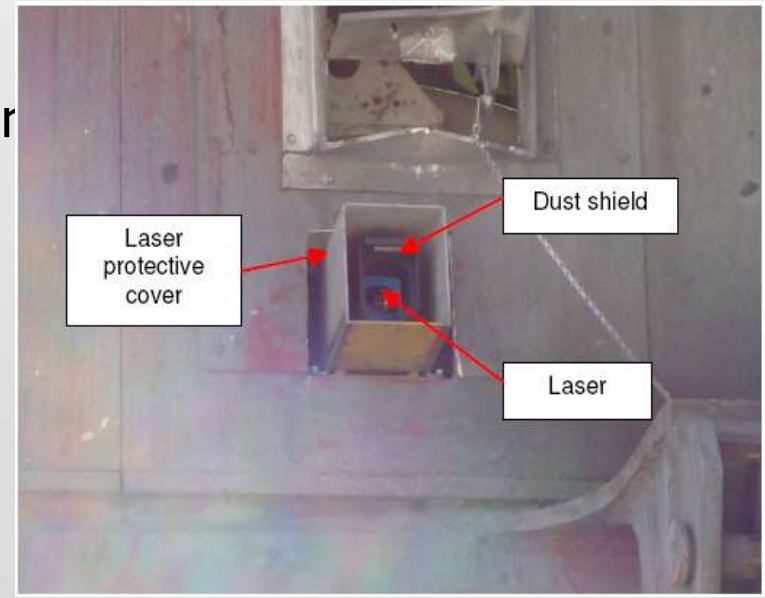
- ✓Permite Desarrollos Futuros
- ✓Permite Payload AC
- ✓Permite Capacidad de Excavación
- ✓Permite Cálculo de Carga
  - ✓Fuerzas de Excavación
  - ✓Tensión de Cables

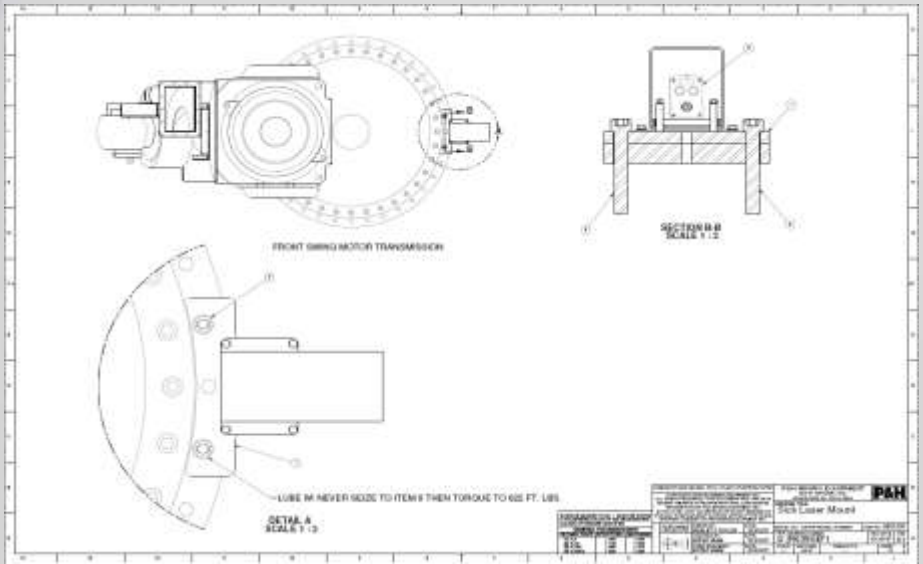


Calibración Laser Dinámica

Puntos Clave

- ✓ Sistema de medida preciso
- ✓ Calibración Mejorada
- ✓ Disminuye offset de Resolver
- ✓ Procedimiento Simplificado

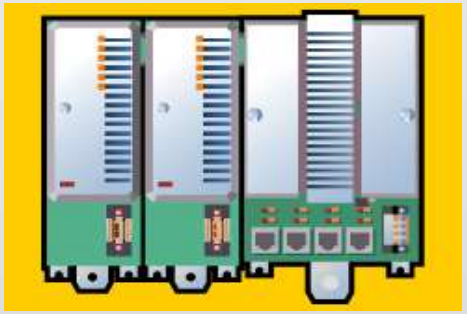




Operación del Sistema Payload

Pantalla Cabina de Operador

AC800 Controlador Supervisor



PC104 Computer

Descomposición de Ciclo Payload

Ciclo de Operación Típico de Payload

- ✓Estados típicos de Producción
- ✓ Ciclo Productivo
  - ✓Todos los Estados y Criterio
  - ✓Material cargado en Camión
- ✓Ciclo no productivo
  - ✓Estados Perdidos
  - ✓Material no Cargado en Camión

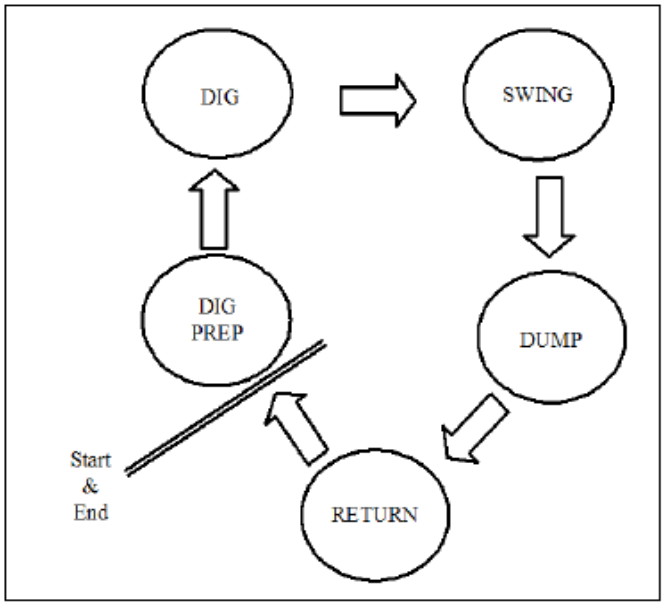
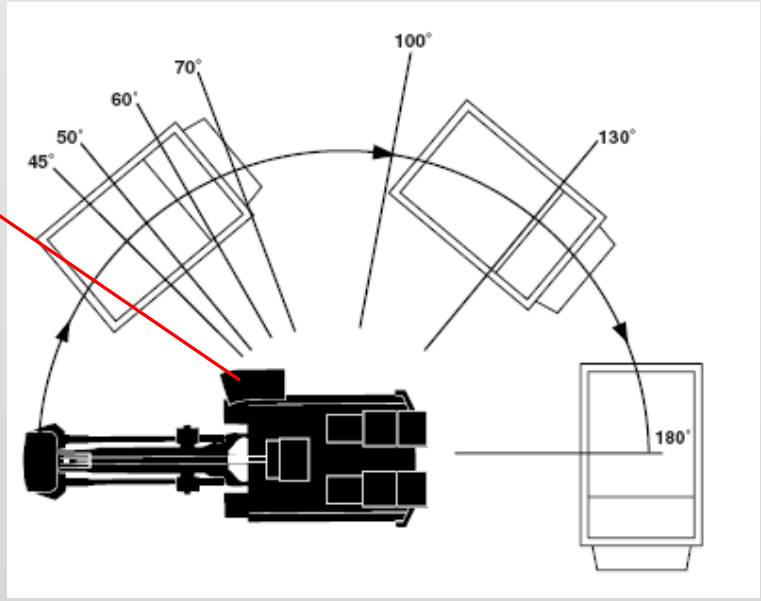


Figure 3-1: Typical Operating Cycle Diagram

Ciclo de Limpieza Payload

Ciclo no Productivo Payload
Ciclo de Limpieza

- ✓Ángulo mínimo de Swing
- ✓Altura Mínima del Balde
- ✓Material no Cargado



Machine Calibration

Boom Limits Calibration

Must be completed after changes to boomlimit setttings, dipper change out, or maintenance on hoist/crowd transmission

Last Successfully Completed On: 5/8/2008 11:41:16 AM

Payload System Bias Calibration

Must be completed to improve Payload's accuracy when the dipper has had major repaire

Last Successfully Completed On: 5/1/2008 10:57:45 AM

English

Español

NOTE: If the dipper is changed, the Payload System requires a new configuration file

Hoist Lube Drive Comm Fault

Payload Bias Calibration

Before starting calibration, raise the dipper off the ground and trip the dipper door

Start Bias Calibration

10

Remaining calibration cycles required

Bias Calibration Procedure

Perform steps 1 through 4: 10 times

Step 1: Return dipper to tuck position

Step 2: Simulate dig motion through air with no swing (keep dipper empty). Stop at a bank exit position.

Step 3: Swing the shovel a minimum of 90 degree and bring to a stop (Minimize hoist and crowd motion)

Step 4: Position the dipper in a truck dump configuration and trip the dipper door

NOTE: If the dipper is changed, the Payload System requires a new configuration file

English

Español

Four Point Boom Limit Setup With Laser Calibration

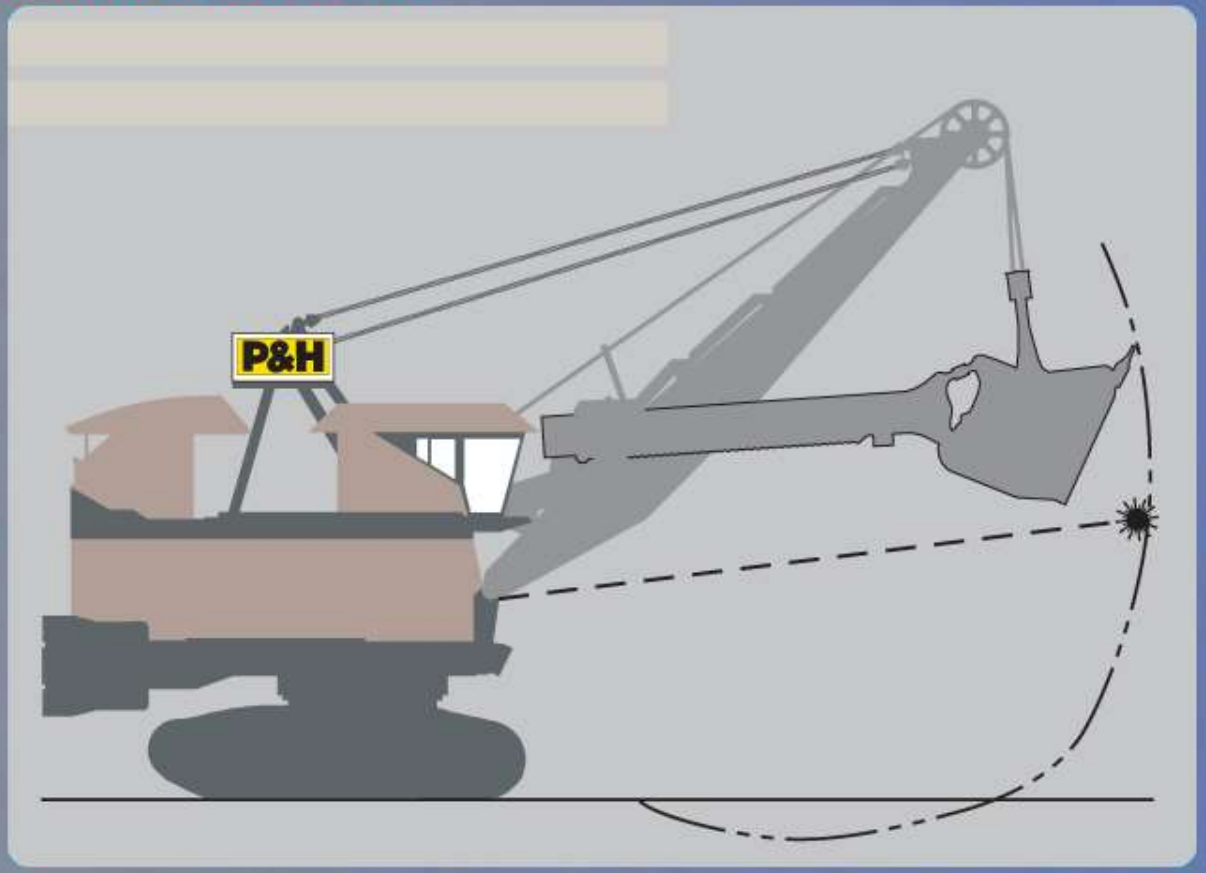
Abort

Activate Laser

Before activating laser, raise the handle until level, fully extend sticks until there are 2-3 teeth between the green horns and crowd pinion. Apply crowd and swing brake.

Hoist Brake Set!

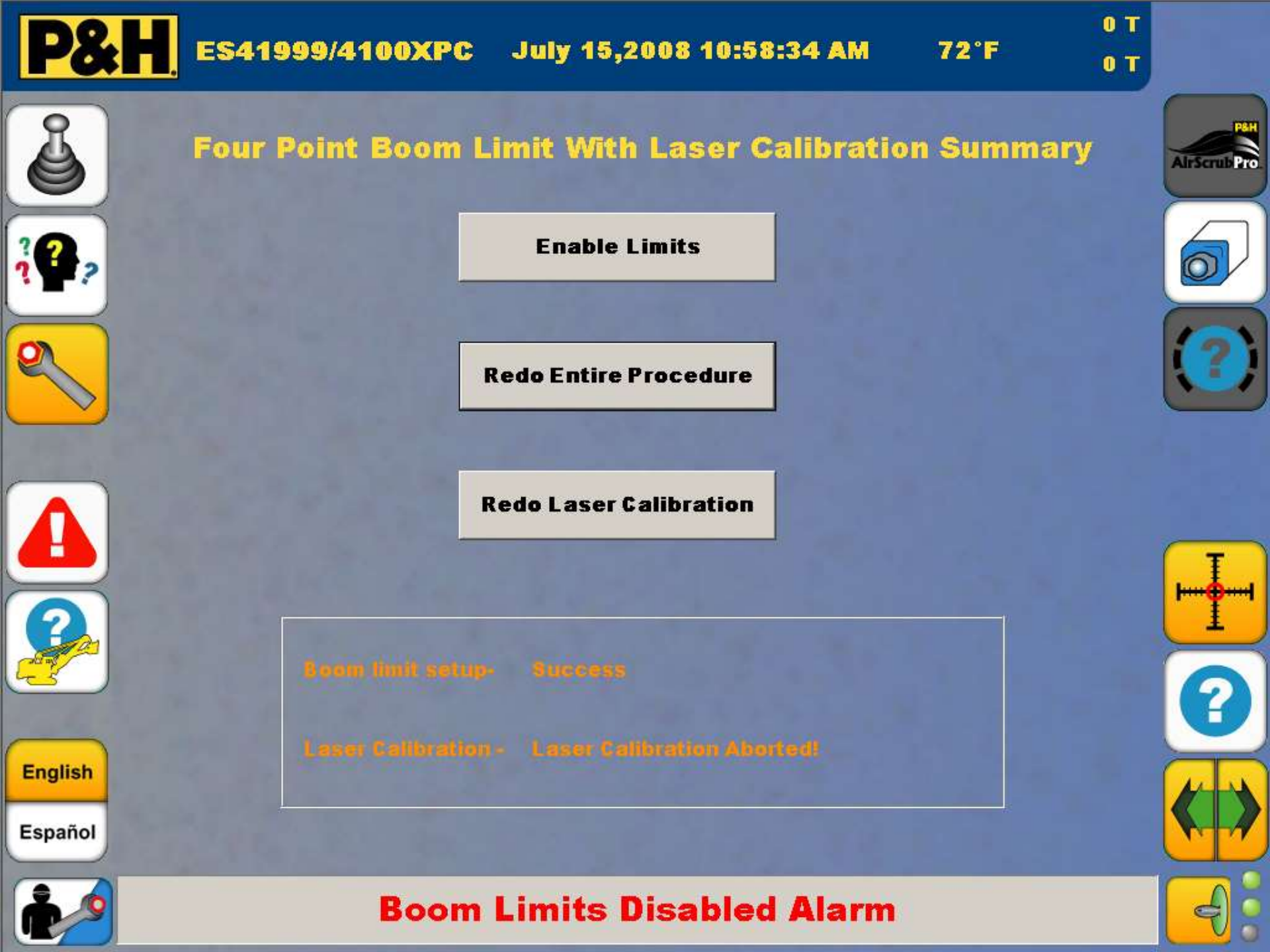
Dipper In Correct Position!



English

Español

DDCS SWG Comm Fault

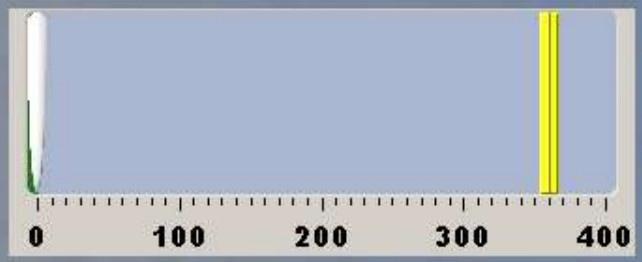

P&H
ES41999/4100XPC
July 15,2008 10:58:34 AM
72°F
0 T
0 T
Four Point Boom Limit With Laser Calibration Summary
Enable Limits
Redo Entire Procedure
Redo Laser Calibration
Boom limit setup- Success
Laser Calibration - Laser Calibration Aborted!
English
Español
Boom Limits Disabled Alarm

Payload System Display

NOTE: If the dipper is changed, the Payload System requires a new configuration file

Current Unit Is US Short Ton

Current Truck Payload (Tons)



Tonnage to Truck Capacity

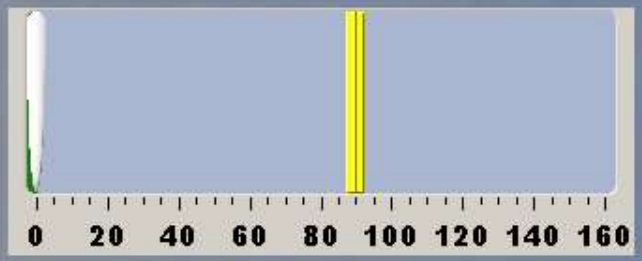
360.0 (Tons)

Previous Truck Load

189.4

PayLoad: Calibrate

Current Dipper Payload (Tons)



Current Dipper Load

0.0

(Tons)

Tuck Dig Swing Dump Return-Tuck

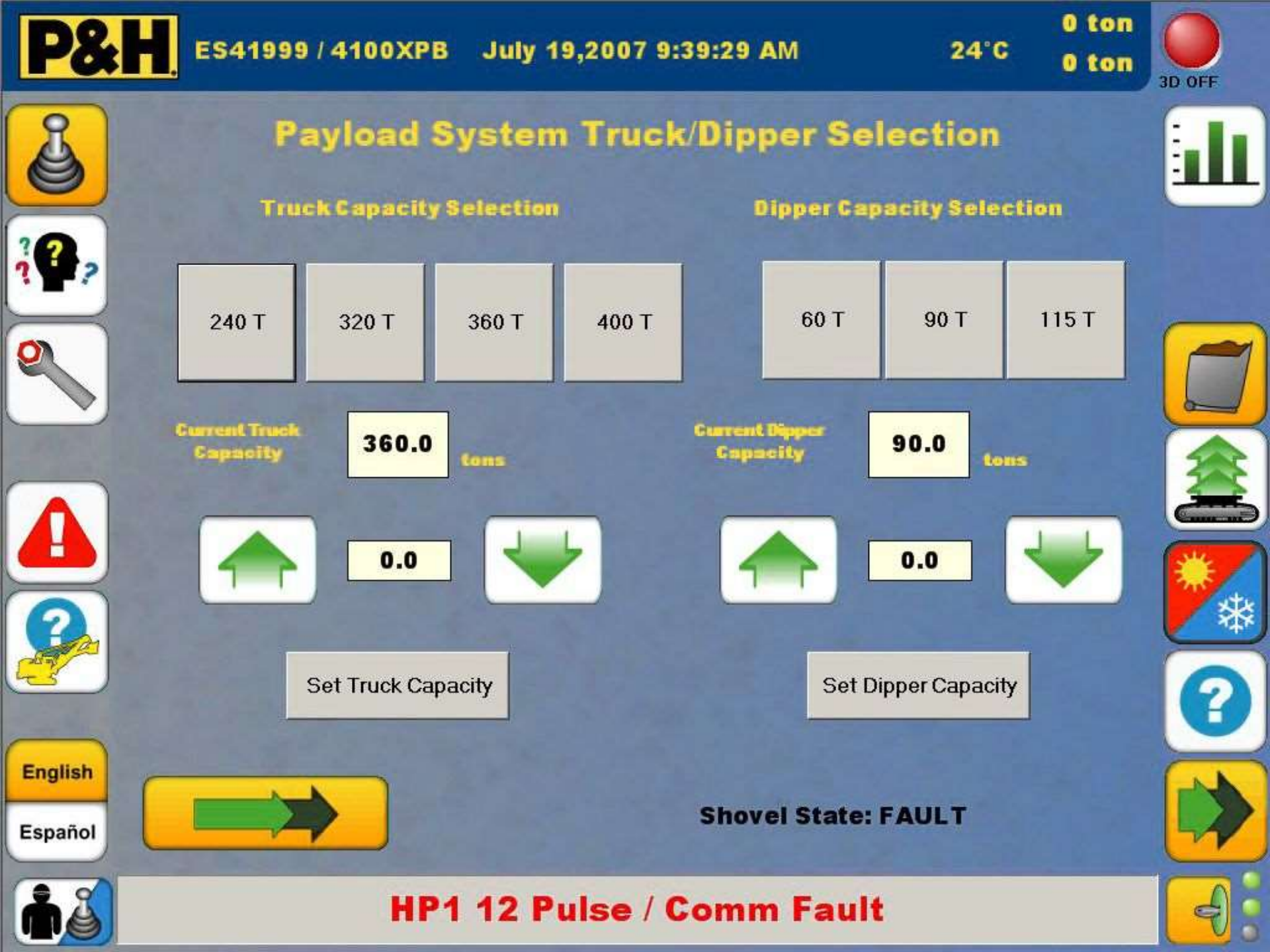
Fault Indicator

P C E I

English

Español

Bank 4 RPC Cap Pressure Switch CA Fault


P&H
ES41999 / 4100XPB
July 19,2007 9:39:29 AM
24°C
0 ton
0 ton
3D OFF
Payload System Truck/Dipper Selection
Truck Capacity Selection
Dipper Capacity Selection
240 T
320 T
360 T
400 T
60 T
90 T
115 T
Current Truck Capacity
360.0
tons
Current Dipper Capacity
90.0
tons
0.0
0.0
Set Truck Capacity
Set Dipper Capacity
English
Español
Shovel State: FAULT
HP1 12 Pulse / Comm Fault

P&H ES41999/4100XPC April 16,2009 8:21:01 AM 0°C 0 T 0 T

Payload System Display

Attention: Boom Limits Calibration Required! No Dipper Weight Available

Truck ID

Tonnage to Truck Capacity

360.0

Material Code

Operator ID

Delay Code

0

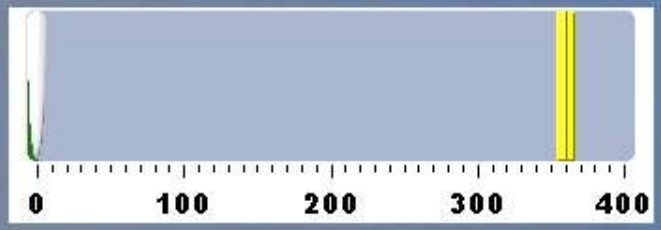
English

Español

Current Unit Is US Short Ton

PayLoad: Calibrate

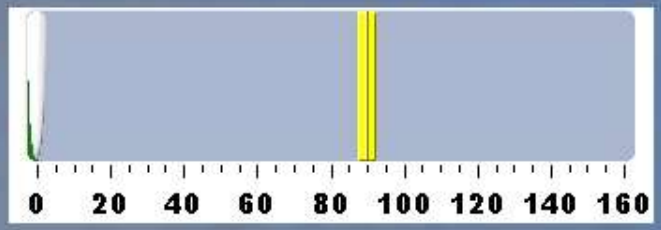
Current Truck Payload



Previous Truck Load

0.0

Current Dipper Payload



Current Dipper Load

0.0

Tuck Dig Swing Dump Return-Tuck

Fault Indicator

P C E I

Auxilliary Supply Breaker Open Fault

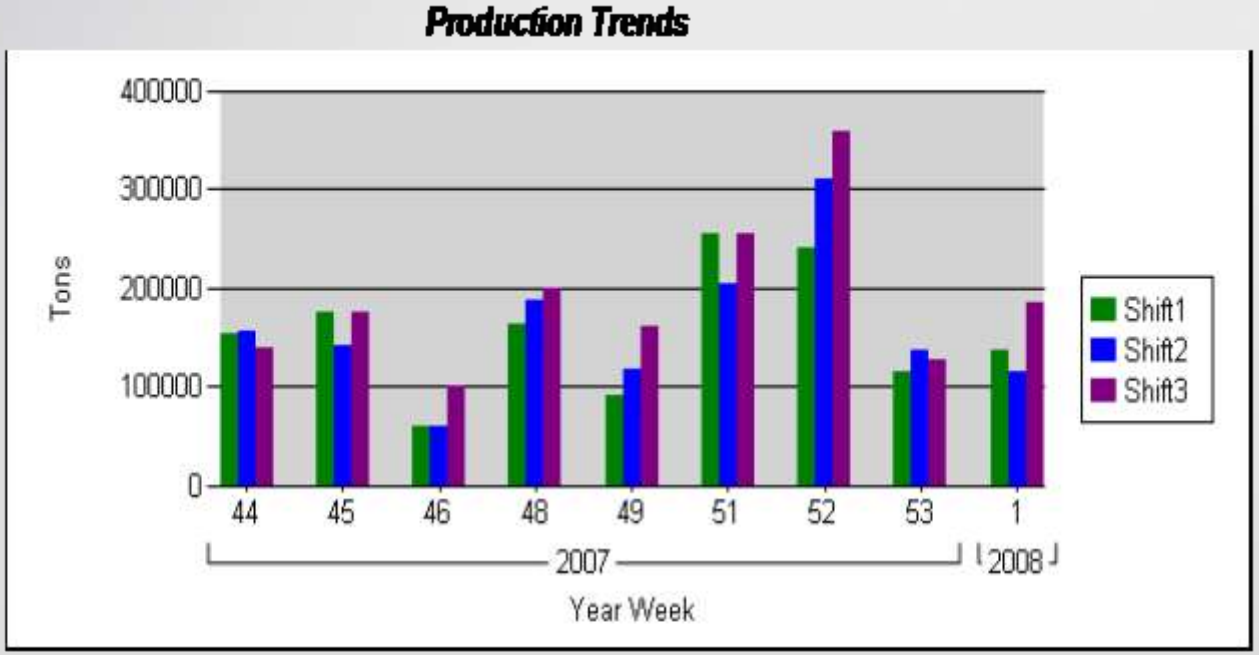
Información Payload

- ✓ Sistema Payload
  - ✓ Bases de datos MS Access (DB)
  - ✓ Almacenamiento de Información
  - ✓ Transportable a otras Aplicaciones

Payload – Producción

ES41141

Units: English



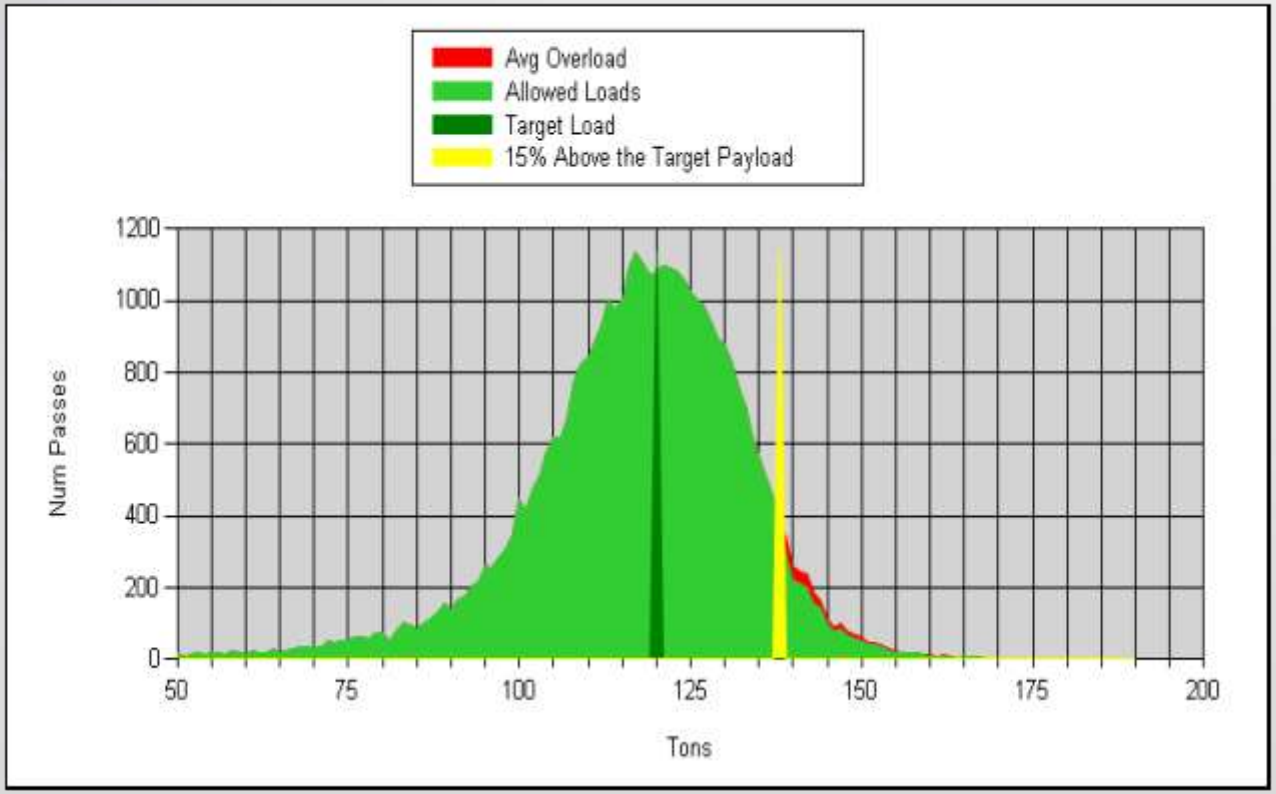
Week Of Year	(Week Of)	Total Tons	Volume	Ton per Hr	Vol per Hr	Ton Per Op Hr	Vol per Op Hr	Total Op Hr	% Utilization
1	(12/31/2007)	436,585	317,516	8,316	6,048	10,085	7,334	43.29	0.82
44	(10/29/2007)	448,293	326,031	7,231	5,259	9,460	6,880	47.39	0.76
45	(11/5/2007)	494,248	359,453	6,140	4,465	8,457	6,151	58.44	0.73
46	(11/12/2007)	219,655	159,749	6,864	4,992	8,884	6,461	24.72	0.77
48	(11/26/2007)	551,373	400,999	8,049	5,854	10,091	7,339	54.64	0.80
49	(12/3/2007)	370,071	269,142	5,693	4,141	8,567	6,231	43.20	0.66
51	(12/17/2007)	714,909	519,934	6,441	4,684	8,992	6,540	79.50	0.72
52	(12/24/2007)	907,623	660,090	6,649	4,836	9,115	6,629	99.58	0.73
53	(12/31/2007)	378,087	274,973	7,960	5,789	10,389	7,556	36.39	0.77

Payload – Distribución de Carga

ES41141

Units: English

Load Distribution



Plot Data — Midpoint — All Loads — Allowed Loads

Shift	Num Passes	Avg*	Avg Overload*	Passes Over 115%**
Shift1	11990	116.19	-9.81	632(5%)
Shift2	12180	117.21	-8.79	833(7%)
Shift3	14536	116.96	-9.04	1004(7%)

* Red background indicates the average is greater than 126 (5% above the target payload 120)

** Red background indicates that more than 5% of loads are greater than 115% of the target payload