LINK-BELT SPEEDER

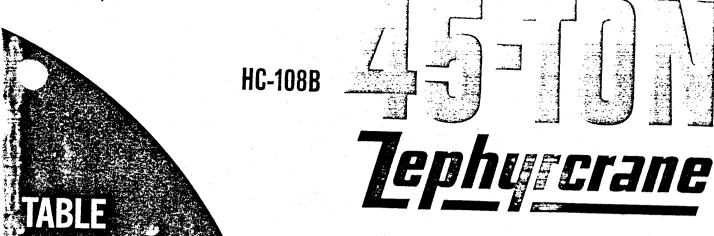
45-TON Tephyrcrane

TRUCK-CRANE

GENERAL INFORMATION ONLY

Speed-o-Matic power whydraulic controls

Angle-type boom
and revolutionary
"'HI-LITE'' boom



Unmatched in its class for € Might and Versatility

OUTSTANDING CAPACITY... The HC-108B is the most attractively-priced 45-ton truck crane on the market today, yet it outlifts and out performs many truck cranes with the same or greater capacity ratings. Has built-in large crane capacity, yet retains the versatility of smaller machines.

POWER HYDRAULIC CONTROLS . . . Link-Belt's matchless Speed-o-Matic system provides smooth, fast, precise control of all machine functions. "Feel of the load" gives the operator that confident feeling of safety.

FULL-FUNCTION DESIGN . . . Independent power flow for each machine operation enables operator to hoist, swing and boom with full independent two-directional power control. Only Link-Belt has this "move-ahead design".

MAXIMUM SAFETY... Independent boomhoist powers boom up and down with smoothness and precision; boom lowering clutch is standard. Exclusive (optional) reversing clutches provide two-directional power for either or both main hoist drums, offering faster, safer, more effective operation.

TRANSPORTABILITY UNLIMITED . . . Adapts to transportability within the limits of state highway weight limitations. 55-minute strip-down—with HI-LITE boom—and without the extra service expense of an auxiliary crane. Demonstration on Page 14.

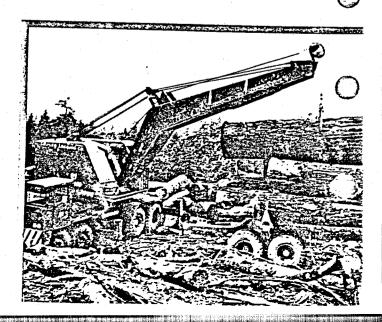
GENERAL INFORMATION ONLY

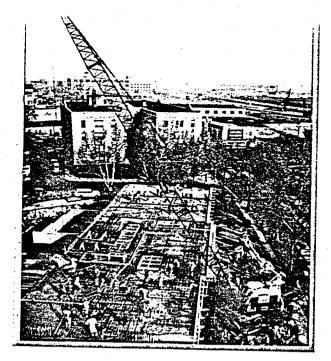
The sense of the s

CONTENTS

STRENGTH

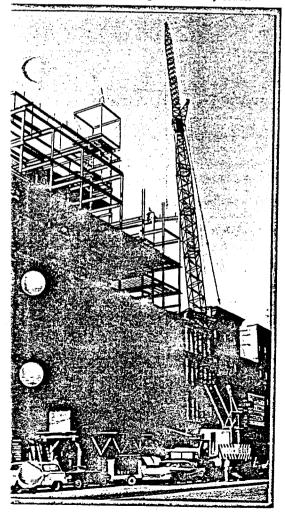
The HC-108B lifting capacity and stability under heavy loads are second to none in its class—whether it's a logging boom or a crane boom of extended length.





REACH...

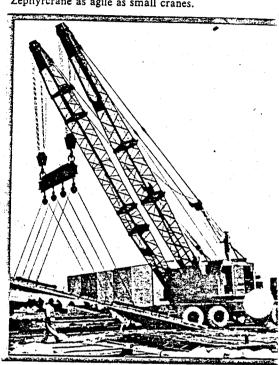
Can lift booms as long or longer than any other 45-ton truck crane. Has perfect "feel" at 200 feet for light and heavy loads.



High speed operations become realities with separate power trains providing swift, simultaneous machine movements.

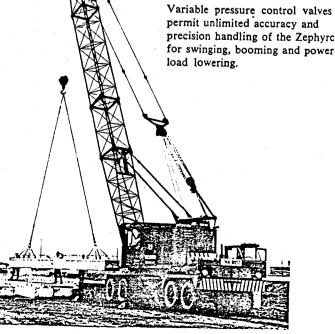
VERSATILITY.

Speed-o-Matic controls with independent swing, hoist and boom action make the Zephyrcrane as agile as small cranes.



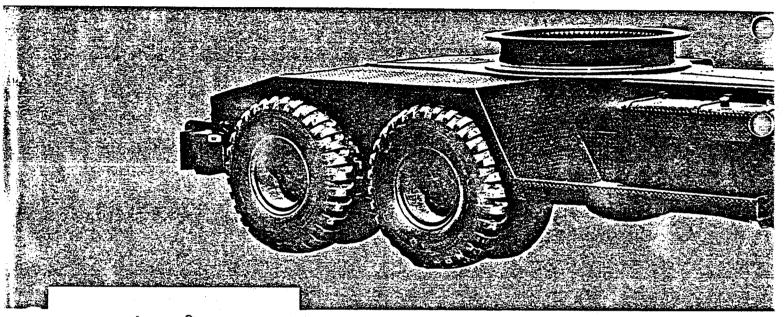
PRECISION ...

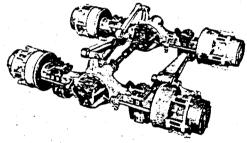
permit unlimited accuracy and precision handling of the Zephyrcrane for swinging, booming and power load lowering.



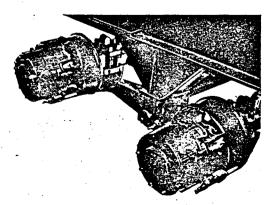
TETU DE MARIERS

cat-quick on the road...tiges





PLANETARY AXLES are well suited for truck-crane carriers because they provide high mechanical efficiency and place the final force at the rim of the wheel for greater traction effort. Additional advantages are their relative lightweight, low maintenance record and high ground clearance



BOGIE OR WALKING BEAM SUPPORT for both front and rear axles on 4-axle carrier allows tandem wheels to follow uneven terrain for maximum traction and mobility.

Standard 4-axle carrier

Custom-built to Link-Belt Speeder's specifications, this specially designed carrier provides a sturdy, stable working platform for all lifting crane jobs . . . offers the quality construction needed for many years of trouble-free service.

lt features these oustanding customer ienefits as fandardseguipment

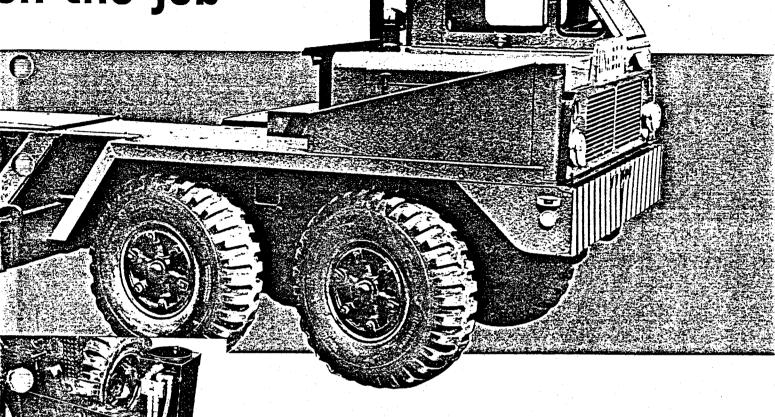
- Hydraulic power steering.
 Full-floating walking beam support for tandem front and rear axles.
 12 speeds forward and 3 reverse provide a wide range of speeds for both on and off-highway travel.
 8 x 4 drive.
 Planetary rear axles.
 8 wheel air brakes.

- Removable front and rear outrigger boxes and beam
- O Diamond plate rear fender

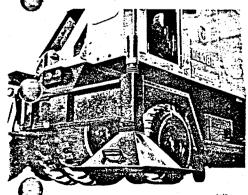
Optional/features include

- Diesel engine
 Electric remote control
- Screw type outrigger jacks and lightweight pontoons
 - Hydraulically controlled outrigger beams and jacks





HYDRAULIC OIL IS POSITIVELY checked in each cylinder by a pilot-operated safety check valve . . . fixed connection between check valve and cylinder . . . assuring maximum safety during lifts. Check valve and connections are protected by a steel



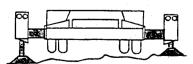
REMOVABLE FRONT AND REAR OUTRIGGER BOXES AND BEAMS add to the ease of stripping weight from the HC-108B for highway travel. Full-width, double sliding beams in both front and rear boxes are mounted on rollers for fast, easy extension or retraction. Screw-type outrigger jacks are optional and the lightweight pontoons, also optional, feature a quick connect and

Power Hydraulic Outriggers

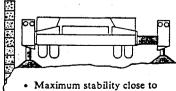


Optional hydraulic outriggers have individual beams and piston jacks which are positioned quickly and accurately. Maximum stability is insured even on the roughest terrain or close to structures or obstacles. No additional cribbing for proper adjustment is necessary. Directional control valve at operator's stand provides oil pressure for the hydraulic outriggers. This valve locks existing pres-

sure in the Speed-o-Matic system and assures no loss of pressure at the opera-tor's control panel while positioning the hydraulic outriggers. All hoses are concealed in the outrigger beams to prevent any external abuse. A safety check valve on each jack cylinder prevents loss of pressure due to accidental line breakage. Quick disconnect on hoses permits outrigger boxes to easily be removed.



· Maximum stability on roughest terrain



structures or obstacles

Three Optional Arrangements

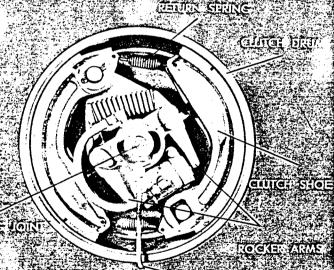
- Two-point contact (rear only) with individual cab controls for both beams and jacks.
- Four-point contact (front and rear) with individual ground-operated controls for beams and jacks at all four contact points.
- Four-point contact with rear two points operable from operator's cab.

GENERAL INFORMATION ONLY

Exclusive Speed-o-Matic power hydraulic controls

for pin point spotting, perfect "feel", added safety

The Speed-o-Matic Clutch



TVDZQUE UNI

Oil under pressure, flows from hydraulic tubing significant into clutch cylinder?
When control valve is actuated, pressure within the cylinder increases proportionately to the pressure exerted on the control lever. This causes the cylinder pistons to extend—each working against a rockers arm which, in turn, engages a clutch shoe with the clutch drum. Difference in length of the two rocker rms causes one shoe to engage ahead of the others for smooth clutch action. (In this picture the shoe on the right would engage first.) NOTE the cotter key and end cap have been removed from the heel of the shoe on the right. The heel of each does not rotate around a fixed point but instead is free to move into engagement—allowing full shoe contact.

Developed by Link-Belt Speeder—proved outstanding in the field

Speed-o-tic is a true power hydraulic control tem—far superior to manual controls, considerably more effective than air or hydraulic-booster type systems. Standard equipment on the HC-108B—as it is on all Link-Belt Speeder models—Speed-o-Matic has been thoroughly proved by the success of thousands of Link-Belt Speeder owners since 1936. At a flick of his wrist, the operator can put his HC-108B through its paces. Response is fast and positive—without jerk, jump or lag. And there's perfect "feel" of the load at all times through variable pressure control valves.

Self-adjusting, interchangeable, hydraulic actuated clutches

Speed-o-Matic clutches make it unnecessary for the operator to adjust clutches in the morning and again as the work progresses. Weeks, and in some cases months, may pass before even a minor adjustment is needed. That's because hydraulic actuated pistons engage the clutch shoes to the clutch rim. Therefore, the clutch cylinder pistons automatically compensate for normal lining wear and heat expansion. The hydraulic pressure remains constant to assure full power transmission.

Oil under pressure does the work

In the Speed-o-Matic control system, oil pressure (generated by a compact, engine-driven pump) does all the work . . . delivers power for all operating functions of the machine. This system is unaffected by day-to-day atmospheric variations, does not require priming or bleeding. Only seasonal oil changes are required. It eliminates control rods, collars, bell cranks and other fast-wearing parts normally found in mechanical or booster-actuated clutches. Also, Speed-o-Matic ends the annoyance and the hazards of jerk, jump or lag common to other systems.

As shown in the diagram at right, oil pressure in the accumulator tank is maintained between 900 and 1050 psi. By means of variable pressure control valves, the operator can meter this oil pressure to each operating clutch. This means the operator is always sure of prompt, positive, smooth response.

Further, the micronic type replaceable oil filter keeps the oil clean . . . provides additional assurance of trouble-free operation.

Short-throw levers make operation a breeze

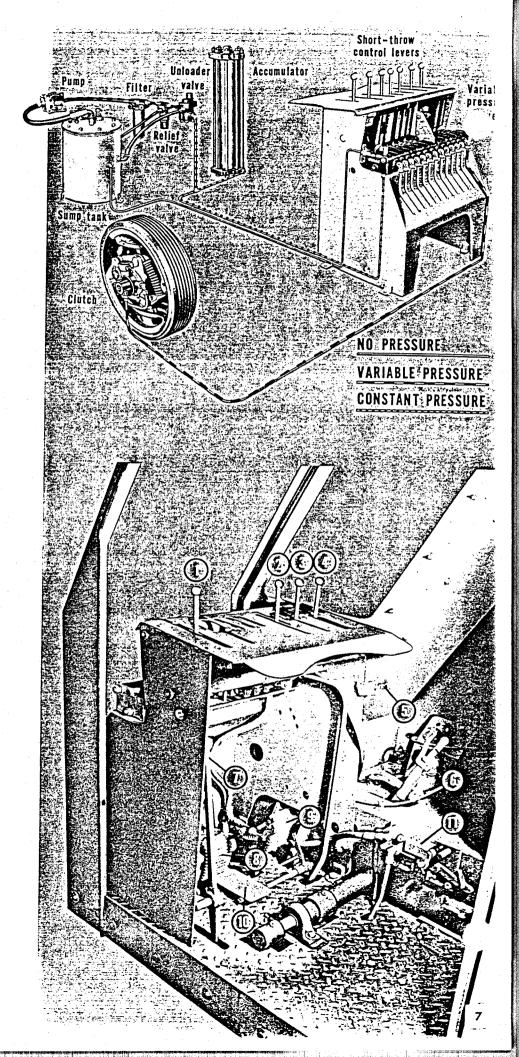
Conveniently located, Speed-o-Matic controls make the operator's job far less fatiguing . . . keep him fresh and alert throughout the shift . . . minimize end-of-the-shift letdown . . . encourage the operator to take fullest advantage of the machine's high production potential.

The fingertip-operated Speed-o-Matic control levers on the *standard* control stand at right are:

- 1. Swing control
- 2. Boomhoist
- 3. Front drum
- 4. Rear drum

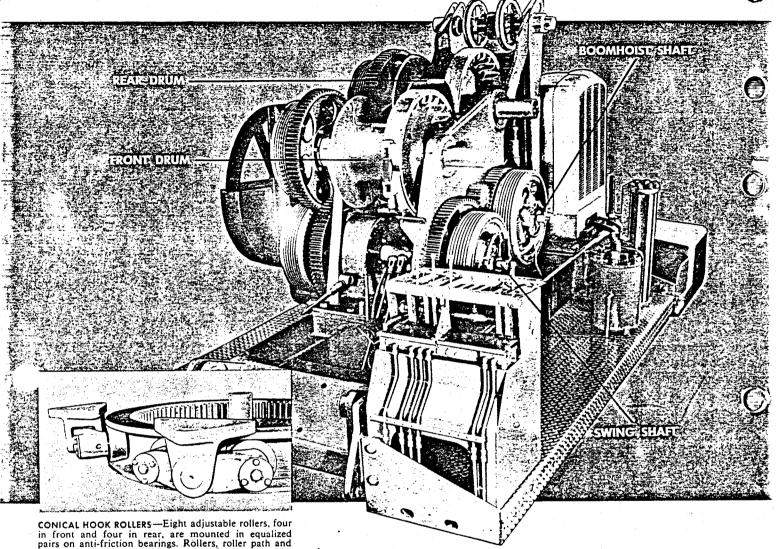
OTHER CONTROLS ARE:

- 5. Boomhoist locking pawl
- 6. Swing lock
- 7. Engine master clutch
- 8. Front drum brake pedal-
- 9. Rear drum brake pedal
- 10. Foot throttle
- 11. Swing brake variable pressure valve (control at operator's upper right)

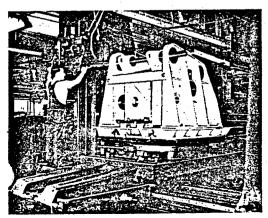


FIGE WORK

Full-function design reveals...



CONICAL HOOK ROLLERS—Eight adjustable rollers, four in front and four in rear, are mounted in equalized pairs on anti-friction bearings. Rollers, roller path and mounting brackets are all heat-treated for long, trouble-free service. Conical face of rollers permits true rolling action without the scuffing common to cylindrical rollers. This design gives smoother swings with less wear . . . eliminates centerpin loadings.



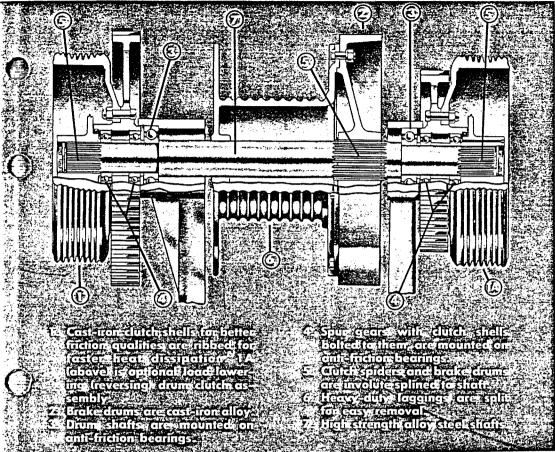
LINE BORING OF SIDE HOUSINGS is performed to extremely close tolerances. The result—precision fits that greatly reduce chance for misalignment and wear. Eliminates bearing caps and bolts.

Full-function design provides separate power trains for each machine operation. Result is more standard features . . . a wider choice of optional features that do not restrict any other operations

With the HC-108B you get a big bonus in terms of less machinery wear. That's because each operation is performed through a separate power train. The other gears run free on anti-friction bearings under no appreciable load . . . therefore with insignificant wear.

Another bonus is the exceptionally easy access for maintenance offered by the HC-108B. If necessary, the entire upper machinery can be field stripped, piece by piece, without removing major portions of the cab.

New concept in power flow...



Exclusive drum shaft design

Since each Link-Belt Speeder operation (hoist, boomhoist, swing, etc.) utilizes a separate shaft—very short shafts can be used to minimize deflection. The drum shafts (as illustrated at left) are mounted in the side housings on anti-friction bearings. And, like all shafts in these precision-built machines, they're involute splined.

Because clutches and brakes generate heat, they are completely separated from each other. This design results in faster, more effective dissipation of performance-cutting, wearcausing heat. Heat from brake does not reduce efficiency of clutch or vice versa.

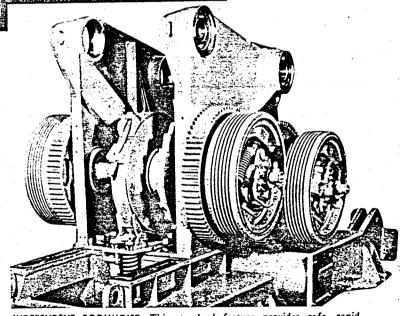
Two-speed hoist drums

Available on either, or both, main drums, this arrangement allows instant choice of two inhaul speeds. By moving the standard control lever, the operator may change speeds (approx. 150 fpm or 300 fpm) "on the fly."

More readily accessible than most servicemen would believe possible

On the infrequent occasions when an HC-108B needs detailed inspection or service, it's unlikely it will be out of action very long. The upper machinery arrangement makes all components easy to reach—without "knuckle-busting," without tearing down the entire upper and without need for auxiliary crane equipment.

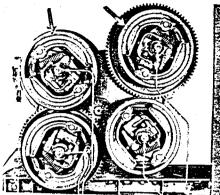
And to simplify service, cut downtime, simplify parts stocking—all HC-108B main operating clutches are interchangeable with each other. Clutch drums, linings, and other components are completely interchangeable throughout the machine. Any clutch can be removed without "pulling" any other component.



INDEPENDENT BOOMHOIST. This standard feature provides safe, rapid, power booming up and down—both operations controlled by Speed-o-Matic power hydraulic clutches. Provides precision control for all booming operations. An automatic spring applied brake is power hydraulically released for boom lowering or raising.

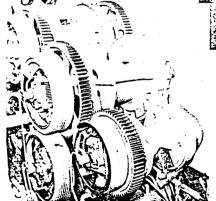
In addition, a safety locking pawl—manually controlled from the operator's position—holds boom at any fixed operating radius.

Tailor the truck crane to the job

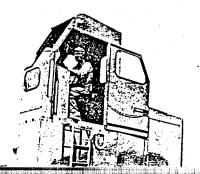


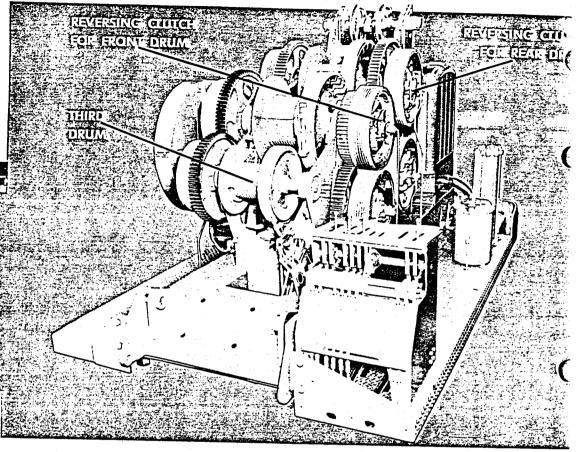
EXCLUSIVE REVERSING CLUTCHES offer faster, safer and more effective operation. They are available for either or both main drums, giving two-directional power for each drum. In crane work, they provide power load lowering of the main hoist line and the jib whip line . . . enable you to power down even the lightest loads.

In logging, either reversing clutch can be used as a highly efficient slack kicker. Further, though the operator is using either or both reversing clutches, he can swing or boost up or down at the same



HIGH-CAPACITY THIRD DRUM—This feature is particularly valuable for pile driving and for operations that require "snaking in" a load . . high in speed and line capacity . . . powerful . . it is completely independent and will not interfere with other operations such as booming, swinging or power load lowering. On specialized jobs, it can be used as a powerful tagline.





for maximum application versatility

Nowhere is the superiority of Link-Belt Speeder design and engineering more apparent than in the wide choice of factory or field-installed optional equipment. The basic HC-108B can become a custom-tailored machine—at close to standard machine price.

All operations (hoist, boomhoist, swing, etc.) are controlled by separate shafts and

clutches which operate independently or together without restricting any other operation.

The features illustrated are only a few of many available. But they provide evidence of how an HC-108B can be readily equipped for more efficient work on a wide range of highly specialized applications.

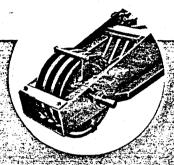
Optional features include:

- Variety of engine and engine-converter power packages
- Reversing clutches for either or both main drums
- Elevated operator's cab
- Twist-type throttle control mounted on swing or hoist lever
- Drum rotation indicator
- Third operating drum
- Hydraulic jack for one-man power raising or lowering of retractable high gantry
- Electric remote control with 5-speed main transmission
- Two-speed hoist drums

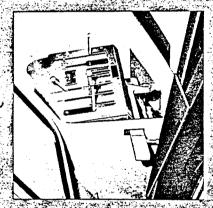
ELEVATED CAB puts the operator up where he can see his work on specialized loading jobs. No longer is it necessary for a spotter to act as a second pair of eyes in such operations as loading into a gondola car or stacking logs high on a truck. Result is greater speed of operation with added safety. Available in 2' or 4' heights.

Angle-type boom...

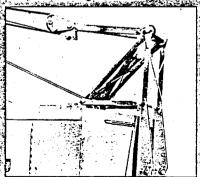
for general use...



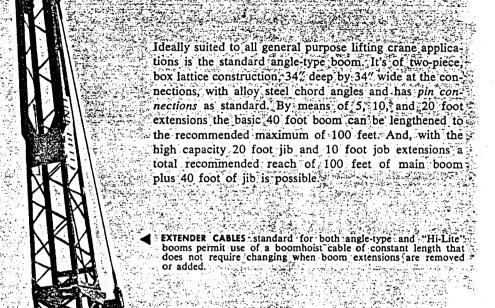
THREE SHEAVE HEAD MACHINERY mounted on anti-friction bearings. No need to lower boom for daily greasing. Triple sheaves permit multiple reeving of hoist line for extra fine control and spotting loads. Jib peak sheaves also on anti-friction bearings.



BOOMHOIST LEVER. KICK-OUT standard for Angle-Type boom or HI-LITE boom see pages 12-13) makes close radius booming extra safe. No danager of booming up to, or beyond the balancing point since the boom will strike the first, bolt head that triggers release of the boomhoist lever. Once the boomhoist clutch is disengaged, the automatic spring-applied boomhoist brake holds boom at that position until lowering is desired.

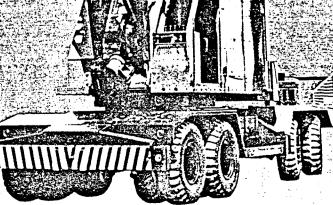


RETRACTABLE HIGH GANTRY, standard equipment for both booms, can be quickly raised or lowered under boomhoist power allows operation from either position. (Also used for powered counterweight removal—see page 15). Available for one-man, powered gantry lowering is a hydraulic jack device.





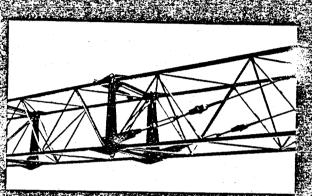
minimum radius.



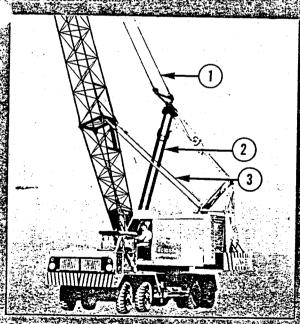
For long booming...the revolutionary

Less weight + double strengthe

GENERAL INFORMATION ONLY

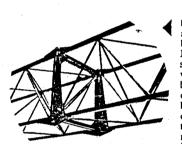


MIDPOINT, SUSPENSION CABLES This cable arrangement furnished with "HI-LITE" booms gantry lends supports to extra long booms at mid-point reduces boom deflection when raising boom from ground Required with all "HILLITE" booms over 130 feet long and optional for use with booms of lesser lengths



O EXTENDER CABLES (Standard) connect bridles of "Hi-Lite" boom gantry to boom head. For Jong boom work over 130 feet two sets of criender cables are required one set to boom deflection when raising boom from grounds when the same boom from grounds and the John Boom only if the lite boom only if the lite boom only if over 130 feet long to increase the angle of upport and give a better angle of lift It can also be used for oms under 130 feet of converts to a short boom for disinting is see strip-down Page 14 stripe of the lite of lite

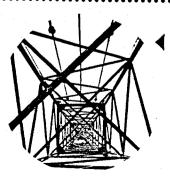
when main boom is removed



PIN CONNECTIONS—are standard for both the angle-type boom and the optional "HI-LITE" boom. They permit fast, simple folding . . . save time when inserting or removing boom extensions. Because chords are butted together, boom stresses are not on the connecting pins. All boom section butt plates are precision machined to eliminate possible high spots . . . assure proper full-face mating of sections.



THREE SHEAVE HEAD MACHIN-ERY for either standard angle boom or optional "HI-LITE" boom features three boom-point sheaves mounted on anti-fric-tion bearings. No need to lower boom for daily greasing. Triple sheaves permit multiple reeving of hoist line for extra fine control in spotting loads. Jib peak sheaves also on anti-friction bearings.



A STUDY IN SYMMETRY is this end view of the optional "HI-LITE" tubular boom. Pyramidlike, tetrahedronal cross bracing design cuts long boom deflection and whipping action to a safe minimum. The four main chords are sealed square tubes of high-strength, lightweight alloy steel Latticework and internal cross bracing are of sealed, round tubing.

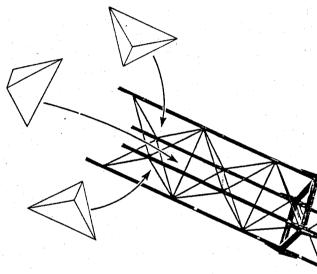
"Hi-Lite" tubular boom design core capacity, longer reach

TOT UT THE

Unassisted, the HC-108B raises a total of 200 feet of boom and jib from ground to sky...

Applied geometry and new steel pay off. Use of an age-old geometric figure—the tetrahedron—plus high strength, light weight steel tubing explains how it's possible for

this 45 ton rig to pick up from the ground 150 feet of main boom plus 50 feet of jib or 150 feet of main boom alone . . . both unassisted . . . with "Hi-Lite" boom,

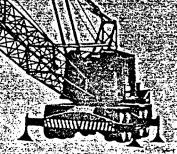


TETRAHEDRON IS STRONGEST OPEN BRACED GEOMETRIC FIGURE and is the only geometric figure made of just four sides. And, because the four sides are all triangular in shape, this pyramid-like structure offers the greatest resistance to stresses or loadings from all directions. Hundreds of these triangles combine to form scores of tetrahedrons throughout the length of the "Hi-Lite" boom. All work together as a brace against the combined forces of compression, torsion and tension.

CABLE SUPPORTING ROLLERS are required when a third drum cable passes over crane boom. One roller is furnished as standard for "Hi-Lite" booms, 40 feet to 100 to long. These rollers, full width of boom and mounted anti-friction bearings, protect any long boom from the slap or wear, also give longer cable life.

Job-tailored safety-rated features include

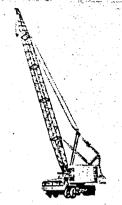
spring-loaded fixed boom backstops for angle booms and telescopic boom backstops for angle booms and telescopic boom backstops for Hi-Lite booms extender cables for both booms hydraulic controlled ng brake triple safe independent boom hoist power up and down automatic brake and safety locking pawl, boom hoist kickout device. Among optional features are boom angle indicator, drum rotation indicator, cable supporting tollers for top side of crane booms and roller type hoist cable guards for both crane booms.

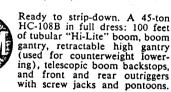


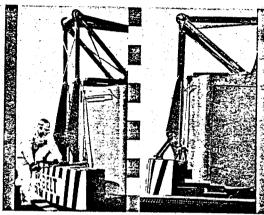
HC-108B

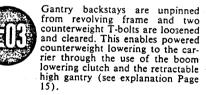
roadability with "Hi-Lite" Boom

55-Minute strip-down... without an auxiliary crane



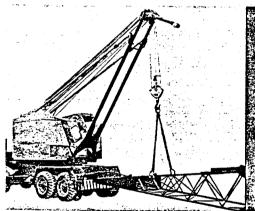


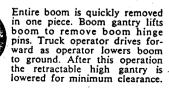


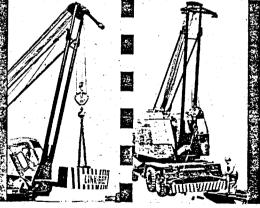




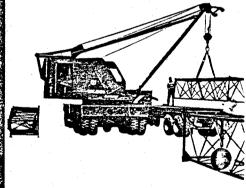
The counterweight remains on the carrier as a rigger reeves a cable into the extra sheave of the "Hi-Lite" boom gantry, converting it to a short lifting boom. (Boom gantry is normally used to provide a higher angle of support for boom). Telescopic backstoppinned to short boom.



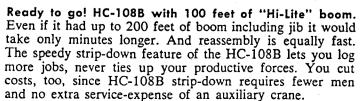


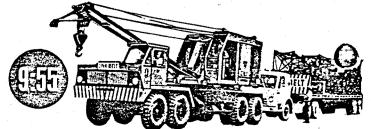


Next, the operator swings the upper around and with boom gantry lifts and spots the counterweight on the flat bed truck. Now the complete rear outrigger assembly, including the screw jacks and beams, is also removed by the boom gantry and placed on the hauling unit.



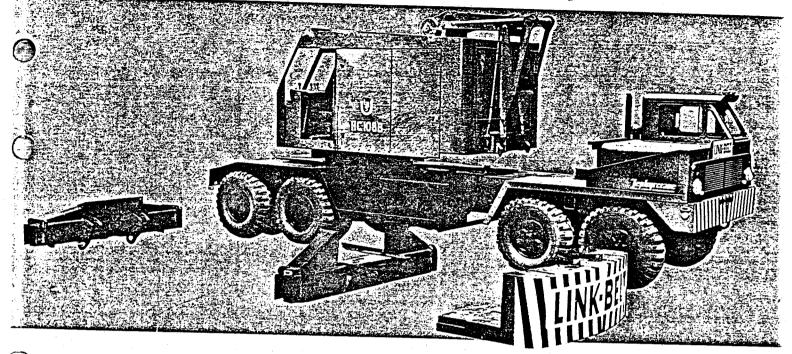
Connecting pins are quickly tapped out of the boom while counterweight and outrigger are loaded. The boom is then loaded section by section on the flat bed this completes a job in mit, that usually takes half a day or more.





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Sheds weight quickly for job-to-job travel



HC-108B Zephyrcrane answers need for fast field stripping to meet highway weight restrictions

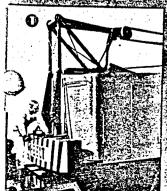
It is often necessary, especially with larger truckcranes, to strip the machine of all excess weight for legal travel over the highway.

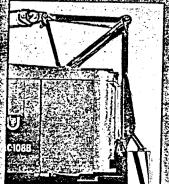
The ease and speed with which a machine can be stripped is a most important factor since time is precious to the busy contractor handling several, widely scattered jobs. A machine that can pick-up-and-go in a hurry is not just desirable—it's a must. Such a ma-

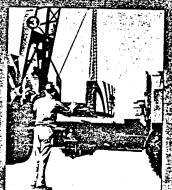
chine is the HC-108B.

It is pictured mounted on the standard 4-axle carrier, with all major components removed. These include the complete crane attachment, together with both front and rear outrigger boxes and beams. The one-piece counterweight is removed quickly and safely with the retractable high gantry lowering method outlined below . . . standard on the HC-108B.

One-piece counterweight quickly-easily-removed







With upper facing rear, the temporary struct is put in place. Gantry backstays are unpinned from revolving frame: With a weight hooked to the boom or load line tension; is applied to boomhoist cables loosen and actear, the two counterweights T-bolts.

Releasing tension on boomhoist cables with boom lowering clutch power lowers the counterweight to the carrier frame. Then the gantry backstays are repinned to upper frame.

Now swing upper around to front and fasten hoist sling to counterweight. Then spot counterweight on hauling unit or to the ground.

IC-1003 Tephyrcrane

Feature for feature...matchless in its work range

Check this Buyer's Guide to quick facts and features.

STANDARD

UPPER

Speed-o-Matic controls All-welded, stress-relieved upper frame Involute-splined heat-treated shafting throughout Machine cut spur gears and pinions Exclusive drum shaft design Extended front and rear drum shafts Fully interchangeable clutches Independent boomhoist Boom lowering clutch Eight adjustable conical hook rollers. mounted in four equalized pairs Rollers, roller brackets and roller path are heat-treated Pin-connected crane boom Two-piece, box-lattice crane boom Fixed boom backstops—spring loaded bumpers (standard angle boom) Friction type swing brake Heavy duty retractable high gantry Extender cables Foot-throttle

CARRIER

Three boompoint sheaves on anti-friction

Boomhoist lever kick-out device

bearings

Heavy-duty custom built 4-axle carrier
Hydraulic power steering
Planetary rear axles
12 speeds forward and 3 reverse
Tapered rear outrigger assembly
Double box, removable front and rear outriggers with full width sliding beams
Outrigger beams mounted on rollers
Full width fenders
Storage type running boards
8 x 4 drive
8-wheel brakes

OPTIONAL

UPPER

Wide selection of gasoline or diesel engines equipped with friction clutch, hydraulic coupling or torque converter

Cotta two-speed transmission for gaso engines

Throttle control mounted on swing or hoist levers

Reversing clutches for either or both main operating drums

Third operating drum

Hydraulic jack for raising or lowering retractable high gantry

Elevated cab

"HI-LITE" tubular boom with telescopic boom backstops

Crane boom cable supporting rollers

Crane boom angle indicator

Visual drum rotation indicator

Two-speed hoist drums

CARRIER

Electric remote control

Screw-type outrigger jacks and light-weight pontoons

Hydraulic outrigger beams and jacks (cab or ground controlled arrangements available or combination of both)

Choice of diesel engines

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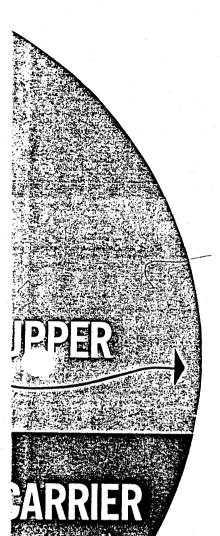
LINK-BELT SPEEDER

Cedar Rapids, Iowa

Woodstock, Ontario, Canada

Power cranes and shovels . . . diesel pile hammers . . . all hydraulic excavators





These specifications comply with the recommended Commercial Standard CS90-58 developed under the National Bureau of Standards issued by the United States Department of Commerce