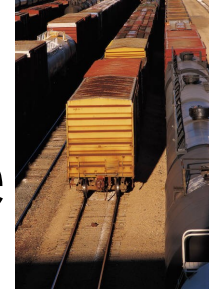




BIGGS APPRAISAL

PROVIDING VALUATION AND TRANSPORTATION SERVICES TO THE RAIL INDUSTRY



Subjects of Value

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Update of the Status of Older Locomotives

In our Spring 2019 Subjects of Value Newsletter, we presented the status of 19 groups of older locomotives popular in the North American Rail System. It is relevant today to look back to see how long older locomotives have persisted in our throw away society. How good, reliable, simple to operate and maintain equipment can stand the test of time. The rail industry is in a period of upgrade, specifically related to their locomotive fleets. The focus of the Class One Railroads is on rebuilding and upgrading reliable high horsepower locomotives at the major builders, rather than buying large numbers of new locomotives. This policy supports the major builders while allowing them time to recapture the taken for granted idea of "Ultra High Reliability, Fuel Efficient Locomotives."

Looking at the history of how long locomotives last gives appraisers a good feel for developing the

normal useful lives that help generate the projected values that investors rely on. Looking at the real rather than the imagined.

The Association of American Railroads Railinc Umler Data file groups locomotives in to a small number of categories that describe the service a unit is used in, how many powered axles it has, and the range of horsepower the unit falls into. The attached list cover 19 popular older builders type families of locomotives or specific models of locomotives that are still widely used in by both Class One, Regional, and Shortline Railroads. The Umler Equipment Identification Code (ETC) that Umler assigns to a locomotive does not use the builder's classification to identify units, but rather it uses a grouping that puts similar apples in the same basket. Each locomotive's ETC starts with a D. The first numeric determines what type of service, freight, passenger, switching, non-cab, slugs and electrics. The second numeric covers the truck

type and number of powered axles, and the third numeric is the range of horsepower. The Umler classification takes 19 builders types and puts them into 9 ETC buckets. While that type of classification is nice if you are aggregating numbers of locomotives for general statistics, it really does not tell you much if you are interested in a particular type or family of locomotives.

Umler has a free form field that allows the owners of the locomotives to input the builders type to be added into the unit's record, so that there is a means of getting relatively good data on how many of what types of locomotives are currently registered in Umler.

Umler is a great system for coming up with real time data that is important for decision makers. The Umler system is maintained by a lot of parties, and the importance of keeping the system up to date should not be understated. An annual review of your Umler fleet listing helps to eliminate the ghosts in the fleet. The free form field that relates to manufacturer's descriptions has a wide number of fields from Unknown to meaningless numbers that relate to an unidentifiable locomotive. The annual review that eliminates ghosts saves you money, as well in the per unit Umler maintenance fees.

The chart below is a snapshot of 19 groups of locomotives that cover the 62 years of evolution, and it shows the change in locomotives by both major builders General Electric and EMD. Older lower

horsepower locomotives ruled the main lines in lash-ups of as many as eight or more units to achieve the pulling power of a few modern locomotives. Modern locomotives are a combination of a dependable, high horsepower diesel prime mover that drives an alternator administered by a complicated computerized electrical system. This system monitors and controls the engine, as well as delivers the optimum pulling power to each axle. The amount of artificial intelligence improvements that have been made to locomotives in just the past few years is staggering. An older but perfectly good, strong, reliable puller would be way out of its league in comparison to modern locomotives. Usually, the previous generation of locomotives have a DC traction system that costs more to maintain than an AC traction system, or the unit's operating system can be hard to trouble shoot. While the keep it simple mantra to locomotives has gone away from the Class One Railroads, for the most part, older locomotives have a niche following on shortlines. These units trade on a regular basis, and have a value that is directly related to condition and equipment accessories.

The advances in locomotives have truly been amazing. Many of the improvements developed and tested on new locomotives can be applied to older locomotives. These upgrades, such as advanced traction control, better injectors, and sophisticated control systems

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Biggs Appraisal and Subjects of Value are service products of Edward D. Biggs III, LLC D/B/A Biggs Appraisal. An Accredited Senior Appraiser (ASA) member of the American Society of Appraisers with a focus on rail equipment, locomotive, railcar, and maintenance of way equipment valuations. Ed Biggs has spent over 40 years in the railroad industry with a mix of significant experience with railroads and leasing companies, including experience in fleet operations, mechanical, and sales. Biggs has particularly in-depth knowledge of railcar extended life upgrade and rebuilding programs. Biggs Appraisal also researches a wide variety of subjects to support valuations, both for its own interests and those of its clients. Stuart Biggs has been involved with every aspect of Biggs Appraisal's business for over 10 years and is a qualified rail equipment inspector that you can expect to see more of on inspections. Johanna Biggs Mitchell has been working behind the scenes for a couple years in research, appraisals, and inspections. The articles in Subjects of Value are by necessity brief and are designed to spur further conversation. Questions, comments, and feedback are always appreciated. This newsletter is aimed at people interested in the rail industry. If you wish to be either added or removed from our mailing list, please email us at biggsappraisal@yahoo.com. We encourage industry distribution of this newsletter.

Update of the Status of Older Locomotives

can make your old reliable pull stronger, improve fuel economy, and reliability. As precision scheduled railroading (PSR) allows more modern locomotives into the secondary market, it is a given that many railroads will continue to upgrade their locomotive fleets. PSR is an opportunity for many to acquire and finance new locomotives.

Biggs Appraisal monitors the fleet in Umler by popular builders' types on an annual basis to follow the changes from year to year over time. This data may be helpful way beyond the appraisals we source it for and we regularly do studies for interested parties in the rail and railroad supply industry. What can we do for you?

Status of Popular Older Locomotive Types

Builder	Builders Family Classification	AAR ETC	Horsepower	Number of Axles	Quantity Originally built	Quantity Still In Umler January 2019	Quantity Still In Umler February 2020	Net Change	Original Production Run Period	Current Average Age	Percent Still Showing Active In Umler
General Electric	B23-7	D113	2,250	4	411	130	130	0	9/77-12/84	40	32%
	B30-7	D115	3,000	4	199	24	24	0	12/77-5/81	41	12%
	B36-7	D116	3,600	4	222	37	37	0	11/80-9/85	38	17%
	C30-7	D125	3,000	6	50	22	16	-6	5/84-6/84	36	32%
	C36-7	D126	3,600	6	169	8	8	0	6/78-12/85	39	5%
	D832B	D125	3,200	4	45	29	29	0	10/89-12/89	31	64%
	B39-8	D117	3,900	4	145	80	77	-3	1/84-4/88	34	53%
	B40-8	D117	4,000	4	233	174	170	-4	4/88-4/92	30	73%
	C39-8	D127	3,900	6	162	20	17	-3	3/83-6/87	35	10%
	C40-8	D127	4,000	6	1461	266	266	0	12/87-6/94	30	19%
	CW40-8	D127	4,000	6	796	498	761	263	12/89-6/94	29	96%
	D940C	D127	4,000	6	125	16	16	0	1/95-4/95	25	13%
	D944CW	D127	4,400	6	3378	3303	3205	-98	11/93-10/04	21	95%
Total					7396	4756					64%
EMD	GP9	D112	1,750	4	3601	963	584	-379	1/54-12/59	63	16%
	MP15	D112	1,500	4	597	590	504	-86	3/74-8/84	41	84%
	GP38	D113	2,000	4	3224	3284	3297	13	1/66-6/75	49	102%
	GP40	D115	3,000	4	2398	1474	1466	-8	11/65-11/74	49	61%
	GP50	D116	3,500	4	278	89	88	-1	5/80-11/85	37	32%
	SD40-2	D125	3,000	6	4310	3713	3702	-11	1/72-11/88	40	86%
Total					14408	9641					67%