NPRHA Color Guidance for NP Equipment and Structures

By Dean O'Neill, January 2026

This document provides the paint formulas for owners of actual Northern Pacific equipment or structures. The first part of the document provides the paint formulas, while the second part provides the research and development that went into producing the formulas.

To start, we will provide one color per page, with the color title and formula.

Imitation Gold

42-AES839581 Cost Code: A ***IMRON 3.5 HG*** Alt:

Car:
Code: Year:
Color: IMITATION GOLD

Northern Pacific RR

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: SPECIAL(80.02 % of Full Gallon) 102.4oz Formula #: 0

718P	BLACK	0.9
719P	RED OXIDE	10.9
717P	WHITE	218.2
722P	YELLOW OXIDE	1511.5
740P	CLEAR	1318.8
741P	CLEAR	575.7

42-AES839581 Cost Code: A ***IMRON 3.5 HG*** Alt:

Car:
Code: Year:
Color: IMITATION GOLD

Northern Pacific RR

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-AES839581 CC: A IMRON 3.5 HG Alt:

MIX SIZE: 102.4oz (Gal (+))
1:24:29 PM Rx Date: 03/13/2010

718P	BLACK	0.9	2
719P	RED OXIDE	11.8	9
717P	WHITE	230.0	3Y 42
722P	YELLOW OXIDE	1741.5	35Y 15
740P	CLEAR	3060.3	44Y 17
741P	CLEAR	3636.0	18Y 32

10/22/2010 MIXED BY: _____ ** MSDS LEAD-FREE **
(80.02 % of Full Gallon)

Red

42-1664 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car: DIC DISTRIBUTORS
Code:
Color: SAFETY RED

Year:

Pb Lead

VOC AP 3.8 LE 3.8

VOC AP 454 LE 454 g/L

MIX YIELDS CAN 80% FULL
SLIGHT MISMATCH MAY OCCUR IF SCALE NOT ACCURATE TO 0.1G

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

**NON-CUM Guide 09/24/2010 Mix Size: 102.4oz (Gallon) Formula #: 646997

718P	BLACK	1.3
717P	WHITE	14.3
724P	YELLOW	144.8
726P	RED	536.1
740P	CLEAR	1623.1
741P	CLEAR	767.4

VOC AP 454 LE 454 g/L

VOC AP 3.8 LE 3.8

42-1664 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car: DIC DISTRIBUTORS
Code:
Color: SAFETY RED

Year:

Pb Lead

VOC AP 3.8 LE 3.8

VOC AP 454 LE 454 g/L

MIX YIELDS CAN 80% FULL
SLIGHT MISMATCH MAY OCCUR IF SCALE NOT ACCURATE TO 0.1G

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-1664 CC: C IMRON 3.5 HG Alt:
DIC DISTRIBUTORS -
MIX SIZE: 102.4oz (Gallon)
2:21:01 PM Rx Date: 04/02/1997

718P	BLACK	1.3	2
717P	WHITE	15.6	12
724P	YELLOW	160.4	4Y 29
726P	RED	696.5	17Y 45
740P	CLEAR	2319.6	54Y 28
741P	CLEAR	3087.0	24Y 43

09/24/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

Data Version 1240

Yellow

P3571 TN Cost Code: W ***EXCEL 3.5*** Alt:

Car: VOLVO TRUCKS NORTH AMERIC

Code: Year:

Color: YELLOW

Pb Lead

VOC AP 3.4 LE 3.8

VOC AP 406 LE 451 g/L

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: 24.0oz (Quart) Formula #: 566684

873A	BINDER	278.3
515H	HS YEL OXIDE	21.3
529H	HS YELLOW	48.1
538H	HS YELLOW	112.8
528H	HS YELLOW	250.9
8685S	REDUCER	21.7
32030S	HS REDUCER	56.2

VOC AP 406 LE 451 g/L

VOC AP 3.4 LE 3.8

P3571 TN Cost Code: W ***EXCEL 3.5*** Alt:

Car: VOLVO TRUCKS NORTH AMERIC

Code: Year:

Color: YELLOW

Pb Lead

VOC AP 3.4 LE 3.8

VOC AP 406 LE 451 g/L

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY

P3571 TN CC: W EXCEL 3.5 Alt:

VOLVO TRUCKS NORTH AMERIC -

MIX SIZE: 24.0oz (Quart)

1:23:53 PM Rx Date: 04/03/2008

873A	BINDER	278.3
515H	HS YEL OXIDE	299.6
529H	HS YELLOW	347.7
538H	HS YELLOW	460.5
528H	HS YELLOW	711.4
8685S	REDUCER	733.1
32030S	HS REDUCER	789.3

10/22/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

Data Version 1241

Metallic Brown

42-AES42-CG70 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car:
Code:
Color: MINERAL RED

Year:

Northern Pacific

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

**NON-CUM Guide 09/24/2010 Mix Size: 102.4oz (Gallon) Formula #: 0

717P	WHITE	73.2
716P	MAGENTA	89.3
709P	MAGENTA ACRYLIC TINT	147.7
718P	BLACK	245.5
719P	RED OXIDE	427.4
740P	CLEAR	1468.3
741P	CLEAR	831.8
722P	YELLOW OXIDE	5.0
724P	YELLOW	14.9

42-AES42-CG70 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car:
Code:
Color: MINERAL RED

Year:

Northern Pacific

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY

42-AES42-CG70 CC: C IMRON 3.5 HG Alt:

MIX SIZE: 102.4oz (Gallon)
2:06:33 PM Rx Date: 02/17/2010

717P	WHITE	73.2	1Y 14
716P	MAGENTA	162.5	2Y 44
709P	MAGENTA ACRYLIC TINT	310.2	5Y 1
718P	BLACK	555.7	8Y 32
719P	RED OXIDE	983.1	7Y 26
740P	CLEAR	2451.4	49Y 18
741P	CLEAR	3283.2	27Y
722P	YELLOW OXIDE	3288.2	6
724P	YELLOW	3303.1	23

09/24/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

Chrome Yellow

42-CG80 Cost Code: E ***IMRON 3.5 HG*** Alt:
Car:
Code: Year:
Color: ORANGE/YELLOW

MIX YIELDS CAN 80% FULL
SLIGHT MISMATCH MAY OCCUR IF SCALE NOT ACCURATE TO 0.1G
Northern Pacific
MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: SPECIAL(80.00 % of Full Gallon) 102.4oz Formula #: 0

718P	BLACK	0.8
717P	WHITE	32.5
721P	ORANGE	74.5
724P	YELLOW	163.0
723P	YELLOW	1441.7
740P	CLEAR	516.1
741P	CLEAR	878.4

42-CG80 Cost Code: E ***IMRON 3.5 HG*** Alt:
Car:
Code: Year:
Color: ORANGE/YELLOW

MIX YIELDS CAN 80% FULL
SLIGHT MISMATCH MAY OCCUR IF SCALE NOT ACCURATE TO 0.1G
Northern Pacific
MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-CG80 CC: E IMRON 3.5 HG Alt:
-
MIX SIZE: 102.4oz (Gal (+))
1:27:37 PM Rx Date: 02/19/2010

718P	BLACK	0.8	1
717P	WHITE	33.3	28
721P	ORANGE	107.8	2Y 19
724P	YELLOW	270.8	5Y 9
723P	YELLOW	1712.5	48Y 18
740P	CLEAR	2228.6	17Y 17
741P	CLEAR	3107.0	28Y 24

10/22/2010 MIXED BY: _____ ** MSDS LEAD-FREE **
(80.00 % of Full Gallon)

Yellow Chrome

42-849590 Cost Code: E ***IMRON 3.5 HG*** Alt: 1
Car:
Code: Year:
Color: REEFER YELLOW

Pb Lead | VOC AP 3.8 LE 3.8 | VOC g/L AP 455 LE 455 | S / C

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: SPECIAL(80.00 % of Full Gallon) 102.4oz Formula #: 0

718P	BLACK	8.3
721P	ORANGE	27.8
717P	WHITE	198.1
724P	YELLOW	204.2
723P	YELLOW	1293.0
740P	CLEAR	640.4
741P	CLEAR	810.6

VOC g/L AP 455 LE 455 | VOC AP 3.8 LE 3.8

42-849590 Cost Code: E ***IMRON 3.5 HG*** Alt: 1
Car:
Code: Year:
Color: REEFER YELLOW

Pb Lead | VOC AP 3.8 LE 3.8 | VOC g/L AP 455 LE 455 | S / C

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-849590 CC: E IMRON 3.5 HG Alt: 1

MIX SIZE: 102.4oz (Gal (+))
1:28:06 PM Rx Date: 10/04/2010

718P	BLACK	8.3	14
721P	ORANGE	36.1	43
717P	WHITE	234.2	3Y 24
724P	YELLOW	438.4	6Y 23
723P	YELLOW	1731.4	43Y 19
740P	CLEAR	2371.8	21Y 26
741P	CLEAR	3182.4	26Y 14

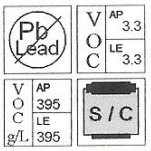
10/22/2010 MIXED BY: _____ ** MSDS LEAD-FREE **
(80.00 % of Full Gallon)

MOW Orange

42-9242010 Alt: 2 ***IMRON 3.5 HG***

Car:
Code:
Color: MPMOWORANGE

Year:

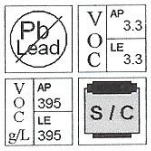


MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 06/24/2011

42-9242010 Alt: 2 ***IMRON 3.5 HG***

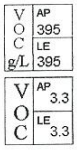
Car:
Code:
Color: MPMOWORANGE

Year:



MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 06/24/2011

**NON-CUM Guide	06/24/2011	Mix Size: 102.4oz (Gallon)	Formula #: 0
715P	VIOLET	1.9	
721P	ORANGE	712.9	
724P	YELLOW	756.5	
717P	WHITE	182.1	
730P	RED	26.4	
740P	CLEAR	779.0	
741P	CLEAR	772.2	



AUTOMOTIVE EQUIPMENT & SUPPLY, INC.
42-9242010 Alt: 2 - IMRON 3.5 HG

MIX SIZE: 102.4oz (Gallon)
4:16:02 PM Rx Date: 12/30/1899

715P	VIOLET	1.9	3
721P	ORANGE	714.8	22Y 43
724P	YELLOW	1471.3	24Y 2
717P	WHITE	1653.4	3Y 11
730P	RED	1679.8	39
740P	CLEAR	2458.8	26Y 14
741P	CLEAR	3231.0	25Y 4

06/24/2011 MIXED BY: _____ ** MSDS LEAD-FREE **

NP Transport Dark Blue

P3014 TN Cost Code: ***EXCEL 3.5*** Alt:

Car: VOLVO TRUCKS NORTH AMERIC

Code: Year:

Color: SHERIDAN BLUE

Pb Lead

VOC AP 3.4 LE 3.8

VOC AP 406 LE 451 g/L

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: 24.0oz (Quart) Formula #: 566470

873A	BINDER	414.0
516H	HS WHITE	10.5
505H	HS BLACK	11.1
513H	HS MAGENTA	44.1
507H	HS BLUE	70.3
32030S	HS REDUCER	56.2
8685S	REDUCER	104.8

VOC AP 406 LE 451 g/L

VOC AP 3.4 LE 3.8

P3014 TN Cost Code: ***EXCEL 3.5*** Alt:

Car: VOLVO TRUCKS NORTH AMERIC

Code: Year:

Color: SHERIDAN BLUE

Pb Lead

VOC AP 3.4 LE 3.8

VOC AP 406 LE 451 g/L

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/22/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY

P3014 TN CC: EXCEL 3.5 Alt:

VOLVO TRUCKS NORTH AMERIC -

MIX SIZE: 24.0oz (Quart)

1:23:34 PM Rx Date: 04/03/2008

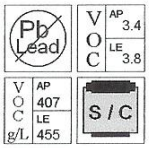
873A	BINDER	414.0
516H	HS WHITE	424.5
505H	HS BLACK	435.6
513H	HS MAGENTA	479.7
507H	HS BLUE	550.0
32030S	HS REDUCER	606.2
8685S	REDUCER	711.0

10/22/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

Data Version 1241

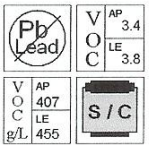
NP Transport Gray

LS191 TN Alt: 2 ***EXCEL 3.5***
Car:
Code: Year:
Color: LIGHT NUETRAL



MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 06/24/2011

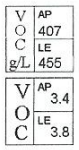
LS191 TN Alt: 2 ***EXCEL 3.5***
Car:
Code: Year:
Color: LIGHT NUETRAL



MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 06/24/2011

**NON-CUM Guide 06/24/2011 Mix Size: 24.0oz (Quart) Formula #: 0

873A	BINDER	339.9
542H	HI STR RED	0.3
507H	HS BLUE	2.3
505H	HS BLACK	31.9
677H	LOW HAPS SAG AGENT	74.3
516H	HS WHITE	192.7
32030S	HS REDUCER	55.8
8685S	REDUCER	86.2



AUTOMOTIVE EQUIPMENT & SUPPLY, INC.
LS191 TN Alt: 2 - EXCEL 3.5

MIX SIZE: 24.0oz (Quart)
3:27:47 PM Rx Date: 12/30/1899

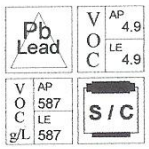
873A	BINDER	339.9
542H	HI STR RED	340.2
507H	HS BLUE	342.5
505H	HS BLACK	374.4
677H	LOW HAPS SAG AGENT	448.7
516H	HS WHITE	641.4
32030S	HS REDUCER	697.2
8685S	REDUCER	783.4

06/24/2011 MIXED BY: _____ ** MSDS LEAD-FREE **

Cascade Green

NP68195 X Cost Code: M ***IMRON 5.0 VOC*** Alt: 2
Car: FIAT / LANCIA
Code: Year:
Color: NP CASCADE GREEN

MIX YIELDS 3/4 CAN (EXCEPT FULL GAL)
ADD ACTIVATOR ONLY WHEN READY TO SPRAY



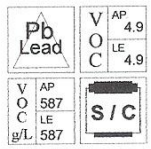
MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/29/2010

**NON-CUM Guide 10/29/2010 Mix Size: SPECIAL(19.10 % of Full Gallon) 24.4oz Formula #: 0

535U	BLACK/NOIR	22.8
555U	WHITE/BLANC	69.5
556U	YELLOW OXIDE	105.4
548U	LT YELLOW	113.6
561U	GREEN/VERT	141.4
540U	YELLOW/JAUNE	205.3
570U	LOW VOC BINDER	104.9
8585S	REDUCER	12.2

NP68195 X Cost Code: M ***IMRON 5.0 VOC*** Alt: 2
Car: FIAT / LANCIA
Code: Year:
Color: NP CASCADE GREEN

MIX YIELDS 3/4 CAN (EXCEPT FULL GAL)
ADD ACTIVATOR ONLY WHEN READY TO SPRAY



MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/29/2010

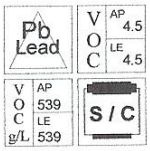
AUTOMOTIVE EQUIPMENT AND SUPPLY
NP68195 X CC: M IMRON 5.0 VOC Alt: 2
FIAT / LANCIA -
MIX SIZE: 24.4oz (Qt (+))
1:17:26 PM Rx Date: 05/11/2007

535U	BLACK/NOIR	22.8
555U	WHITE/BLANC	92.3
556U	YELLOW OXIDE	197.7
548U	LT YELLOW	311.3
561U	GREEN/VERT	452.7
540U	YELLOW/JAUNE	658.0
570U	LOW VOC BINDER	762.9
8585S	REDUCER	775.1

10/29/2010 MIXED BY: _____
(19.10 % of Full Gallon)

1947 Passenger Light Green

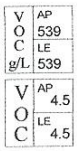
1946PLG A Cost Code: ***CENTARI 5.0 SS*** Alt: 1
Car:
Code: Year:
Color: PINE TREE LIGHT GREEN



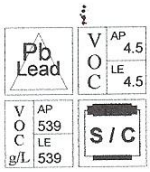
MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/29/2010

**NON-CUM Guide 10/29/2010 Mix Size: 32.0oz (Quart) Formula #: 0

758S	DRIERS	26.6
742A	GREEN/VERT	7.9
700A	WHITE/BLANC	49.5
732A	YELLOW/JAUNE	103.3
741A	GREEN/VERT	29.3
737A	YELLOW/JAUNE	85.4
705A	BLACK/NOIR	466.6
741A	GREEN/VERT	130.2
752A	TSPT BROWN	20.5
725A	IRON BLUE	5.9



1946PLG A Cost Code: ***CENTARI 5.0 SS*** Alt: 1
Car:
Code: Year:
Color: PINE TREE LIGHT GREEN



MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 10/29/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
1946PLG A CC: CENTARI 5.0 SS Alt: 1

MIX SIZE: 32.0oz (Quart)
11:43:47 AM Rx Date: 10/29/2010

758S	DRIERS	26.6
742A	GREEN/VERT	34.5
700A	WHITE/BLANC	84.0
732A	YELLOW/JAUNE	187.3
741A	GREEN/VERT	216.6
737A	YELLOW/JAUNE	302.0
705A	BLACK/NOIR	768.6
741A	GREEN/VERT	898.8
752A	TSPT BROWN	919.3
725A	IRON BLUE	925.2

10/29/2010 MIXED BY: _____

1947 Passenger Pullman Green

4558 A Alt: 1 ***CENTARI 5.0 SS***
Car: GENERAL MOTORS CORP
Code: Year:
Color: PULLMANN GREEN

Pb Lead

VOC AP 4.7 LE 4.7

VOC g/L AP 560 LE 560

MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 10/22/2010

4558 A Alt: 1 ***CENTARI 5.0 SS***
Car: GENERAL MOTORS CORP
Code: Year:
Color: PULLMANN GREEN

Pb Lead

VOC AP 4.7 LE 4.7

VOC g/L AP 560 LE 560

MIXED BY: AUTOMOTIVE EQUIPMENT & SUPPLY, INC. 10/22/2010

**NON-CUM Guide 10/22/2010 Mix Size: 32.0oz (Quart) Formula #: 675107

758S	DRIERS	45.0
701A	WHITE/BLANC	26.0
731A	ORANGE	30.0
737A	YELLOW/JAUNE	81.0
705A	BLACK/NOIR	718.5

VOC g/L AP 560 LE 560

VOC AP 4.7 LE 4.7

AUTOMOTIVE EQUIPMENT & SUPPLY, INC.
4558 A Alt: 1 - CENTARI 5.0 SS
GENERAL MOTORS CORP -
MIX SIZE: 32.0oz (Quart)
3:03:50 PM Rx Date: 08/21/1978

758S	DRIERS	45.0
701A	WHITE/BLANC	71.0
731A	ORANGE	101.0
737A	YELLOW/JAUNE	182.0
705A	BLACK/NOIR	900.5

10/22/2010 MIXED BY: _____

Data Version 1241

Loewy Light Green

42-838990 Cost Code: A ***IMRON 3.5 HG*** Alt: 3

Car:
Code: Year:
Color: LOWEY LIGHT GREEN

Northern Pacific Railroad
3/16/10 alt#Dean

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

**NON-CUM Guide 09/24/2010 Mix Size: 102.4oz (Gallon) Formula #: 0

725P	GREEN	128.9
718P	BLACK	182.7
717P	WHITE	623.5
722P	YELLOW OXIDE	657.1
740P	CLEAR	1245.1
741P	CLEAR	709.9
720P	BLUE	6.9

42-838990 Cost Code: A ***IMRON 3.5 HG*** Alt: 3

Car:
Code: Year:
Color: LOWEY LIGHT GREEN

Northern Pacific Railroad
3/16/10 alt#Dean

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-838990 CC: A IMRON 3.5 HG Alt: 3

MIX SIZE: 102.4oz (Gallon)
2:27:04 PM Rx Date: 03/16/2010

725P	GREEN	128.9	4Y 20
718P	BLACK	311.6	6Y 22
717P	WHITE	935.1	11Y 2
722P	YELLOW OXIDE	1592.2	15Y 17
740P	CLEAR	2837.3	41Y 42
741P	CLEAR	3547.2	23Y 1
720P	BLUE	3554.1	11

Correct Alternate Final

09/24/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

Formula on can sprayed

Loewy Dark Green

42-838989 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car:
Code: Year:
Color: LOWEY DARK GREEN

Northern Pacific Railroad

Pb Lead | VOC AP 3.8 LE 3.8 | VOC AP 455 LE 455 g/L | S/C

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

**NON-CUM Guide 09/24/2010 Mix Size: 102.4oz (Gallon) Formula #: 0

717P	WHITE	84.6
725P	GREEN	224.4
718P	BLACK	397.5
723P	YELLOW	588.8
740P	CLEAR	501.5
741P	CLEAR	1312.2

VOC AP 455 LE 455 g/L | VOC AP 3.8 LE 3.8

42-838989 Cost Code: C ***IMRON 3.5 HG*** Alt:

Car:
Code: Year:
Color: LOWEY DARK GREEN

Northern Pacific Railroad

Pb Lead | VOC AP 3.8 LE 3.8 | VOC AP 455 LE 455 g/L | S/C

MIXED BY: AUTOMOTIVE EQUIPMENT AND SUPPLY 09/24/2010

AUTOMOTIVE EQUIPMENT AND SUPPLY
42-838989 CC: C IMRON 3.5 HG Alt:

MIX SIZE: 102.4oz (Gallon)
2:22:32 PM Rx Date: 12/30/1899

717P	WHITE	84.6	1Y 24
725P	GREEN	309.0	7Y 32
718P	BLACK	706.5	14Y 2
723P	YELLOW	1295.3	19Y 36
740P	CLEAR	1796.8	16Y 42
741P	CLEAR	3109.0	42Y 27

09/24/2010 MIXED BY: _____ ** MSDS LEAD-FREE **

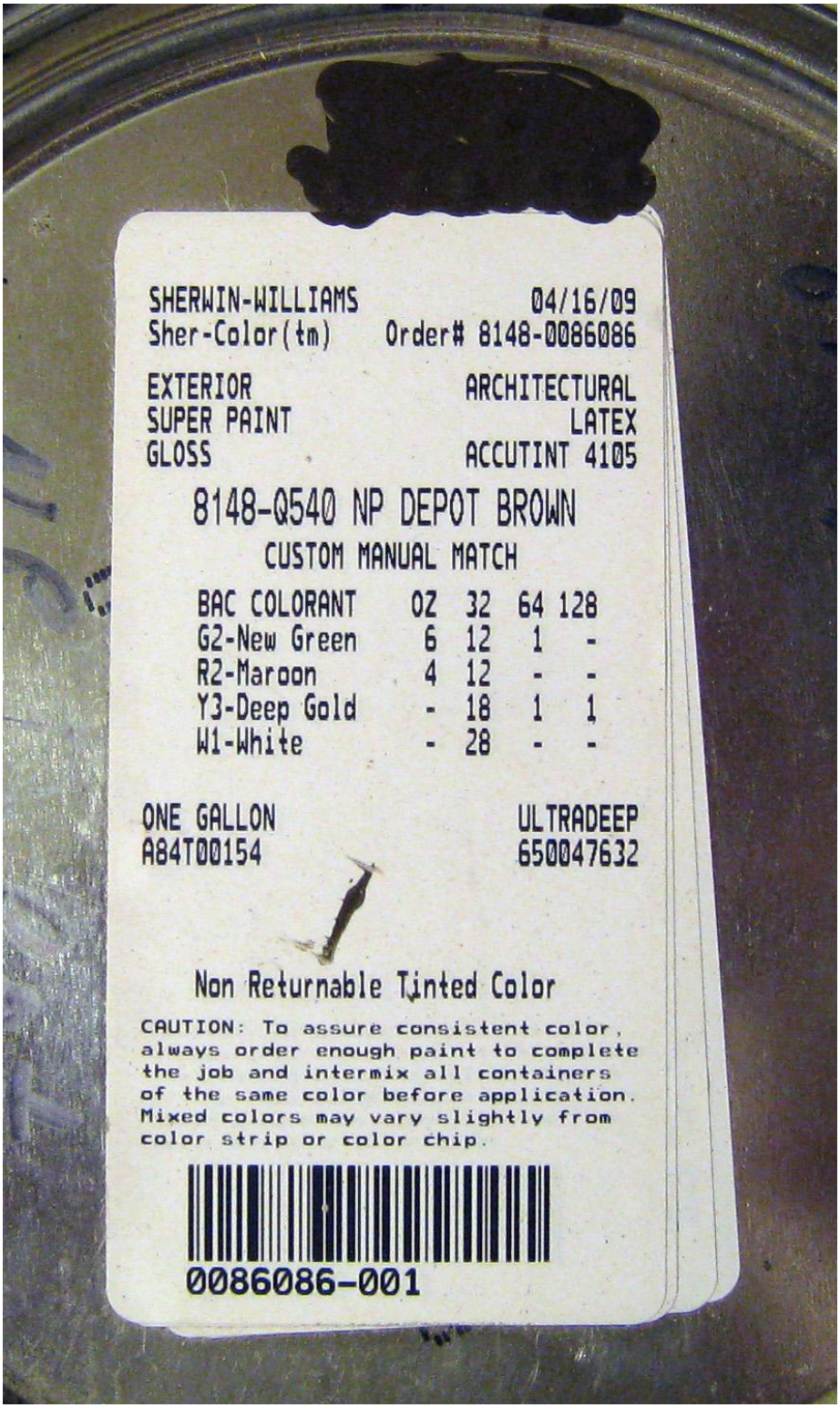
Depot Indian Red

Depot Bottle Green

Depot Sand


8148-R270
SHERWIN-WILLIAMS 03/02/10
Sher-Color(tm) Order# 8148-0104088
EXTERIOR ARCHITECTURAL
SUPER PAINT LATEX
GLOSS ACCUTINT 4105
8148-R270 T/M TAN
CUSTOM MANUAL MATCH
BAC COLORANT OZ 32 64 128
W1-White 2 38 - -
N1-Raw Umber 4 25 - -
R2-Maroon - 3 1 1
Y3-Deep Gold - 26 - -
B1-Black - 1 - -
ONE GALLON ULTRADEEP
A84T00154 650047632
Non Returnable Tinted Color
CAUTION: To assure consistent color, always order enough paint to complete the job and intermix all containers of the same color before application. Mixed colors may vary slightly from color strip or color chip.
0104088-001

Depot Brown


SHERWIN-WILLIAMS
04/16/09
Sher-Color(tm)
Order# 8148-0086086
EXTERIOR
ARCHITECTURAL
SUPER PAINT
LATEX
GLOSS
ACCUTINT 4105
8148-Q540 NP DEPOT BROWN
CUSTOM MANUAL MATCH
BAC COLORANT OZ 32 64 128
G2-New Green 6 12 1 -
R2-Maroon 4 12 - -
Y3-Deep Gold - 18 1 1
W1-White - 28 - -
ONE GALLON
ULTRADEEP
A84T00154
650047632
Non Returnable Tinted Color
CAUTION: To assure consistent color, always order enough paint to complete the job and intermix all containers of the same color before application. Mixed colors may vary slightly from color strip or color chip.
0086086-001

Developing the NPRHA Color Drift Control Cards

All photos by Dean O'Neill, except where noted.

Photo by Gary Tarbox

Color drift control cards were issued by the Northern Pacific and other railways to ensure that color standards were consistently applied to equipment and structures. The Northern Pacific Railway Historical Association (NPRHA) had published some paint formulas in a past *Mainstreeter*, but during conversations at the 2008 Tacoma convention, several of us decided it was time for the organization to publish a full set of color cards much like the railroad had issued color cards. The cards would be targeted at three main constituents:

- Modelers who want to paint their models as accurately as possible
- Manufacturers of train models who want to offer high fidelity NP colors on their products
- Owners of actual NP equipment or structures who want paint formulas they could have mixed for application on those items, including rolling stock, locomotives and depots

In the fall of 2008, Jeff Nichols, Rick Leach, and I (with help from *many* others) set out to research and then produce a set of color drift control cards for common NP colors for which we could find adequate reference material. Rick had a sizable collecting of NP artifacts which would be useful for color matching, Jeff works as a paint tinter at Boeing, while I functioned as the project coordinator and liaison with DuPont and others who provided artifacts and input. The NPRHA Color Card Committee consisted of us three, with help from Gary Tarbox, Tim Repp, and others.

Given that we know of only *one* surviving NP color drift card, we matched to the following sources:

- Surviving NP paint in liquid and dried form

- Paint formulas from the *Mainstreeter*, Vol. 12, No. 4 which is based on earlier research on NP colors
- NP painting diagrams with DuPont color codes
- DuPont color libraries and formulas from the DuPont national railway representative
- Dozens of paint chips, boards, and other hardware from actual NP equipment
- Several NP cars still in existence, including passenger cars with authentic NP paint
- Reference books, NP documents and past *Mainstreeters*

To be as accurate as possible, the NPRHA Color Card Committee spent three years and over a thousand hours conducting research and refinement of these color formulations. Our goal was to match against the strongest reference material available, and then cross verify against as many of the listed resources as possible. We set a bar of having at least three Color Card Committee members approve all matches in daylight and we feel these drift cards represent the very best quality attainable for the railroad we love.

This article will provide a rundown of the resources used to produce each color, notes on the color names selected, common equipment the color was applied to, and a note on which paint was used to produce the card.

The Paints Used for the Cards

We used DuPont Industrial Imron 3.5 for a majority of the paint cards. The Northern Pacific specified DuPont paint brands like Duco, Dulux, and Lucite for many years (these product lines are no longer available), along with a few other brands like PPG and Glidden. Imron 3.5 is a paint that Amtrak, BNSF, the White Pass & Yukon Railway, and others use on their equipment, and we wanted to produce the cards using this paint because it is highly durable, relatively inexpensive, and also because those restoring actual NP equipment could use the formulas to paint their equipment. For a few of the paints, we selected other DuPont product lines from which we found very good matches. We chose to use the high gloss formulation for all the paints we selected because photographic evidence strongly indicated the railroad routinely used high gloss paint for final coats. You can see the gloss finish in many builders' photos, but certainly as the equipment was put into use on the railroad, the gloss finish soon dulled.

Rick Leach was so impressed with the Imron properties that he is painting the caboose in his backyard with it. The Loewy paint scheme in Imron has already been applied *Traveller's Rest* No. 498 in Portland, Oregon.

Four of the color cards represent paints primarily used on structures—Depot Indian Red, Depot Bottle Green, Depot Sand, and Depot Brown. We developed latex paint matches using Sherwin-Williams paint for these cards. The formulas for these paints are posted on the NPRHA Web site—www.NPRHA.org. We wanted preservationists to be able to take the formulas directly to their local Sherwin-Williams store and order up gallons of paint for application to existing NP structures. Unfortunately, latex paint is not as durable or quick-drying as DuPont Industrial Imron, and the color cards required special coated paper sleeves to avoid interaction with the paper envelopes. Acid free envelopes were used to store all the color cards.

The color cards were painted at an automotive paint shop in a spray booth by a professional painter. Imron is very dangerous to inhale and requires the utmost protection. The cards were then reviewed by the DuPont wholesaler and given high marks for quality. The paint was sprayed on twenty-by-twenty-six inch sheets of paper specifically designed for color samples—the same material used by Boeing and others to provide customers with paint samples. The cards are covered with a thin film of aluminum on one side that has a slight tooth, providing an ideal, metallic surface for the Imron to adhere. A special automotive paint coverage gun was used to validate that the two to three coats of paint fully covered the aluminum.

Imitation Gold

Imitation Gold was a key color applied to diesel locomotives and it was also the color used for the stripe on the 1947 streamlined passenger scheme. Some folks will just refer to this color as Yellow or Diesel Yellow, but NP painting diagrams very clearly call the body color on diesels *Imitation Gold* or *Imit. Gold.* A different color, Yellow, is used for some hand rails and steps, and is discussed below.

Our match for Imitation Gold was interesting. We had access to some *live* NP paint from Parkwater shops in a small bottle that was in great condition. We painted it out on a color card and sent it to DuPont National Labs in North Carolina for expert matching. After a month, they provided a formula for DuPont Industrial Imron 3.5, which we ordered and sprayed out on a card. Rick Leach also had chip samples (shards of metal with paint from

NP locomotives) that we then compared to the new paint card. We also compared paint samples from Bill McKown, and to a 1947 passenger car in original paint at Wickersham, WA. We were very pleased with the new Imron match to the reference material, and this color was done.

We verified that over eleven NP painting diagrams specified *Imitation Gold* as the main body paint for F-units, GPs, U-boats, and SD45s. Also other railroads have used a color named Imitation Gold and DuPont has a modern color named Imitation Gold, but our color card is matched to NP Imitation Gold, so use caution when selecting other variations of Imitation Gold.

Red

Red is a color specified on many painting diagrams for locomotives, primarily for the red strip running lengthwise on the locomotive between the Imitation Gold and the Black, but more importantly it's the Red used for the Monad on so much NP equipment. One NP scholar has stated that the NP used the name *Vermillion* in NP documents prior to the 1950s, but based on the painting diagrams and other documents we had in hand, we chose to use the name Red.

We contacted the DuPont railways sales representative for leads on several NP colors, and while few of the NP codes from the 1950s and 1960s had equivalents for today's paint, the Red codes did have a modern match—code 1664. We ordered up a can of this paint in Imron, and it matched extremely well with several of Rick's NP artifacts, including a shard of metal from an NP locomotive with the Red stripe on it.

Here is a picture of a little excess Red in the paint gun painted on a NP switch stand. Looks pretty good, yes?

Yellow

Yellow was a color used as a *safety* color on locomotives and other applications such as the bunks on log flats. On locomotives, areas like the hand rails and the lips of steps were painted with this yellow to improve safety. Several NP locomotive painting diagrams have been posted on the Research section of the NPRHA's Web site—www.NPRHA.org, and in those diagrams you can see specifically where the Yellow paint was applied.

To match this color, we had several paint chips from NP caboose steps and from log bunks. We had hoped that the *Safety Yellow* color recommendation from the DuPont railways sales representative would be a good match, but a pint we ordered turned out to be far too bright when compared to the NP artifacts. So, we turned to several dozen catalogs at the DuPont wholesaler and ended up finding a Volvo Truck chip that was a fantastic match. We painted this out on a test card, and after reviewing it as a group we approved the Yellow. The paint for this color is DuPont Excel 3.5.

One collector presented us with an authentic roll of Scotchlite Reflective Tape that he believes was used on NP locomotives. The tape is reflective by nature and hard to match exactly, but the tape is a *very* close match to the Yellow we settled on. For modelers, the Yellow color could provide a reasonable simulation of the Scotchlite Reflective Tape.

This yellow, when paired with the NP Cascade Green color described below, are the two primary colors for the Cascade Green paint scheme applied to cabooses just prior to the Burlington Northern merger. A letter from NP Chief Mechanical Officer Bill Shannon dated June 13, 1969 called for "painting 900, 1000 and 1100 series cabooses cascade green similar to the new 10400 series cabooses."

Metallic Brown

Metallic Brown was arguably the most widely used color of those we researched, as the NP applied this color to boxcars, cabooses and other equipment. In the model railroad hobby, color names like *Boxcar Red*, *Mineral Red*, or *Red Oxide* are used, but most of the NP documents we examined used the term Metallic Brown to refer to this color. We also found NP documents that used the term *Synthetic Brown*, which was apparently used prior to the 1950s. Because we matched artifacts from the 1950s, we chose to use the name Metallic Brown for our color.

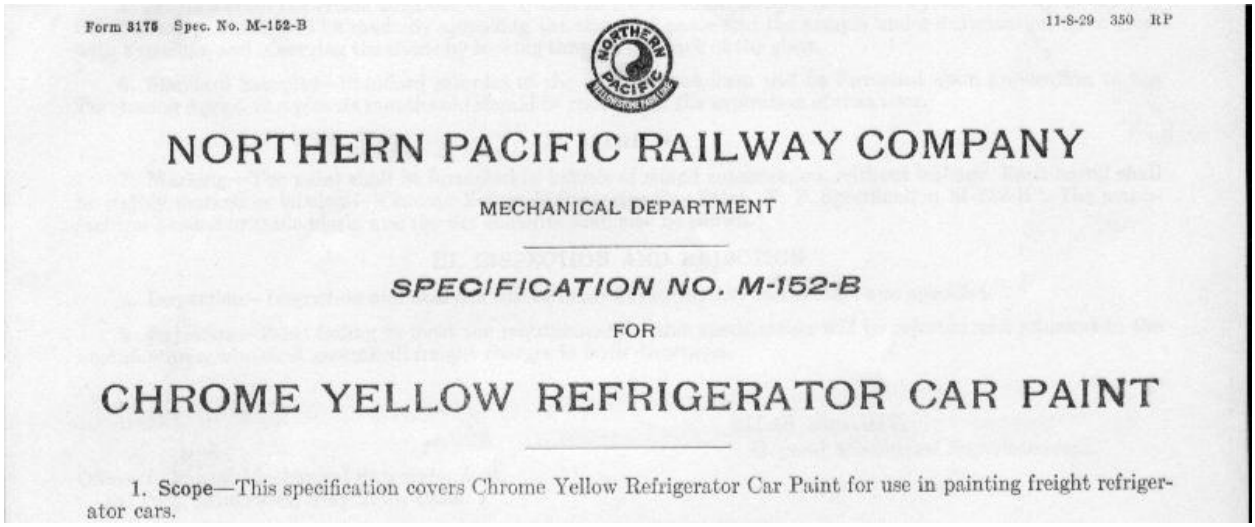
We had no shortage of artifacts to match for this color. We had access to dozens of artifacts but they varied more than our other reference material. For instance, the wood boards exposed to decades of sunlight varied significantly from metal parts off certain parts of cabooses that virtually never saw sunlight or surface damage. It really became an exercise in choosing the artifact that was in the best shape, and verifying that the test spray-outs represented the very best of the other artifacts. The true winner was a 1952 trust plate from NP box car 19864. The plate really, really stood out as a super artifact to match to. In the end, the Color Card Committee was very happy with the paint match and artifact corroboration and we feel it's a great example of our methods working to their best.

The paint for this color is Imron 3.5.

Based on a few *clusters* of artifacts that had exhibited a slightly different brown than the brown we settled on, we considered producing a different brown, but abandoned that idea because, A) we felt that cluster of artifacts most likely represented degraded paint, and B) we found no evidence in the NP documents to suggest there was more than one color of brown used by the NP at any given time. And although there was some slight variation on the best artifacts, it was so close we considered them within an expected margin of error for paint.

Chrome Yellow

Chrome Yellow is probably the most provocative of all the NP color cards. Chrome Yellow was the color used to paint refrigerator cars, per several Mechanical Department documents that we examined like this one from November 8, 1929:



Form 3176 Spec. No. M-152-B 11-8-29 350 RP

NORTHERN PACIFIC RAILWAY COMPANY

MECHANICAL DEPARTMENT

SPECIFICATION NO. M-152-B

FOR

CHROME YELLOW REFRIGERATOR CAR PAINT

1. Scope—This specification covers Chrome Yellow Refrigerator Car Paint for use in painting freight refrigerator cars.

You might ask "I thought the color used on reefers was reefer orange, not yellow…" To some, Chrome Yellow appears to be orange. To others, it appears to be yellow, as on a school bus or pencil. NP Mechanical Department

correspondence on paint specifications at the Minnesota Transportation Museum Archives, dated March 25, 1926, supports this varied perception "Mr. [Harry] Burnham [the NP's engineer of tests] says Chrome Yellow runs in shade from canary to deep orange, and he thinks that the heading on this specification should be left as it is." You can draw your own conclusions as to what common color name you might associate with Chrome Yellow, but the NP Mechanical Department standard for refrigerator cars was clearly Chrome Yellow, from the early 1900s to the late 1960s. (Mechanical refrigerator cars were different, they were typically painted silver. We did not produce a color card for that as we had no artifacts or standards to match.)

To produce a color card for Chrome Yellow, we utilized two key assets. Bill McKown developed a paint mix for Chrome Yellow in the early 1990s, and shared it with the Color Card Committee. We also had access to refrigerator car NP 91724, and to make a long story short, under the car cement on one of the trucks was a *very* well preserved patch of paint. Using tricks with a mirror on a sunny day, we verified that the mix from Bill McKown did indeed match the paint on the truck. We had several other boards and items from refrigerator cars but the paint had degraded so badly, the items were not much use even after some sanding to buff out the top layer. Chrome Yellow paint often degraded quickly, as a survey of NP refrigerator car photos will demonstrate.

We sprayed out Bill McKown's formula onto a card and sent it to DuPont National Labs for a match. We received a very good match in Imron 3.5 and after some final verification the paint was ready for card production.

In this author's opinion, no NP color degraded or changed in appearance more than Chrome Yellow. In some photos of a freshly painted refrigerator car next to some *in service* cars, the difference is dramatic. So while the spec called for Chrome Yellow, NP modelers have their work cut out for them as they try to match cars out on the road.

Refrigerator car repaint from the late 1960s. Photo by Ed Austin, from Jeff Nichols collection

Additionally, according to one NP historian, NP Mechanical Department records from the Minnesota Historical Society indicate that Chrome Yellow was used for the *stripe* on green RBLs, or bunker-less reefers.

Yellow Chrome

There is a second color that is very often used in conjunction with Chrome Yellow, and that is Yellow Chrome. Yellow Chrome has a yellow appearance, and was used as an *intermediate coat*, applied prior to the *finish coat*, which was Chrome Yellow. To clarify this point, here is part of an NP correspondence dated February 26, 1944, that discusses a shortage of paint from DuPont, likely due to World War Two circumstances:

'Your letter February 10th, file 1531, advising that the DuPont Company are unable to fill our orders for Dulux yellow chrome and chrome yellow enamel refrigerator car paint:

Under the circumstances, we have no alternative but to accept the orthodox type material in lieu of the Dulux synthetic specified on orders.'

This refers to 300 gallons Dulux yellow chrome, intermediate coat and 400 gallons chrome yellow enamel, finish coat, synthetic paint due on GSK requisitions 15099, 15100, 9649, and 15100."

Some people have maintained that over the years, NP Reefers left the paint shop with Yellow Chrome and not Chrome Yellow as the final coat, resulting in *yellow reefers*. This may have been due to war-time or other shortages of the pigments for Chrome Yellow, but it was outside the scope of our project to identify which circumstances might have resulted in *orange or yellow* reefers. We debated for hours and hours over the course of roughly six months, poring over car siding fragments, paint samples, photos, NP documents and other artifacts to decide just what we should do for the refrigerator colors. We consulted with many NP historians. In the end, we decided to produce both Chrome Yellow and Yellow Chrome. When painting models or prototype equipment, it's important to consult photos for the year of your project, but when in doubt the NP specification clearly calls for Chrome Yellow.

Bill McKown also had a formula for Yellow Chrome that he graciously sent to us. We painted out a sample card using his Centari paint formula, sent it to DuPont National Labs, and again ordered up a can of DuPont Industrial Imron 3.5. We then verified the match to Bill's paint by spraying the paint out on test cards. The match was approved and we were thankful to have the refrigerator colors behind us.

MOW Orange

Maintenance-of-Way (MOW) Orange was a paint color applied to equipment used in the maintenance or development of the roadway, including cranes, trucks, speeders, etc. A NP document from 1941 used the name *orange roadway paint*, but we chose the name MOW Orange because later documents used this name and we could not find any other official NP specification explicitly stating the name.

For this paint match we had several excellent artifacts from authentic NP speeders, including a metal bracket that was protected from the elements and therefore served as the master artifact. This was not a large, flat artifact that we could have DuPont match, so we had to hand tweak a can of generic MOW Orange. By adding red and other color pigments to the Imron 3.5, we were able to match the punchier, more saturated NP artifacts we had.

DuPont and other paint lines offer *MOW Orange* in their industrial paint chip books, but these were not good matches for the numerous NP artifacts we had access to.

NP Transport Dark Blue and NPT Gray

The Northern Pacific Transport Company, a wholly owned subsidiary of the Northern Pacific Railway, had a two-color scheme for 'bus and truck equipment.' Unfortunately, we were not able to find solid artifacts to match to for these colors. We did have DuPont Dulux paint codes, but Dulux has been out of production for decades, and modern codes that match those codes were deemed unreliable. We did have access to an NPT sign for the Gray, but even that sign had clearly seen some degradation over the years. So to match this color, we looked for the very best photos and consulted with two NPT enthusiasts, sending chips to them for their feedback. We settled on a paint match for these two colors that captured the spirit of the NPT sign and the very best of the dozen or so NPT color images we were able to access.

The Gray and Dark Blue paint used for these chips is a DuPont Excel 3.5 formulation, which could be used to paint an actual NPT truck or bus, should you decide to restore one.

While some photos suggest that some NPT trucks were painted black or even light green, in our research and discussions with NPT experts, Dark Blue and Gray were the official NPT colors. However, some NPT equipment received very elaborate Raymond Loewy paint schemes, representing the distinctive scheme painted on the *North Coast Limited* during the 1950s.

NP Cascade Green

This color ended up being a fun one to research, and really we stumbled upon it towards the end of the overall project. Rick Leach has a brake-lever plate from one of the NP 76400 series of hoppers painted NP Cascade Green. The front of the plate was understandably weathered and degraded, but the back side was well covered in paint that was in great shape for 40 year old paint (not perfect, but very usable as a reference). But we did not just use that as a single reference. We also worked with the DuPont wholesaler and found half a dozen formulations for Burlington Northern green. One of the formulas was older and labeled *BN Cascade Green* specifically, so we ordered up a can of that. When sprayed out, it was very lively and bright, not as dark and rich as the plate. But with a little tweak (more deep dark green as I recall), the paint then matched the diagram plate very nicely. We felt with the base Cascade Green formula and the tweak to bring it in-line with the plate, it was a very good match for NP Cascade Green, used on NP equipment such as the 76400 series. We decide to prepend *NP* in front of the name Cascade Green to help folks know that this was *specifically researched* as NP Cascade Green, and <u>not</u> Burlington Northern Cascade Green. We have reviewed NP letters that refer to the color as Cascade Green, so the name *was* in use before the BN merger.

This green, along with the Yellow mentioned earlier in this article, are the two primary paints used on the late NP caboose repaints in the Cascade Green paint scheme. It appears it was also used for some late NP boxcar repaints.

1947 Pass. Light Green and 1947 Pass. Pullman Green

In 1946 the NP developed a new 'streamliner scheme' for its passenger equipment, and while some equipment was painted in the fall, the lightweight passenger cars entered revenue service in early 1947. The locomotives were painted in 1947. The paint scheme in NP documents was simply referred to as 'streamliner scheme,' and the NP never used the railfan names of *pine tree* or *butter knife* schemes. Several NP historians encouraged us to not use the invented railfan terms for these paints, so we adopted color names that reflected the year the paint scheme entered service.

The streamliner scheme was characterized by a light green color, a classic Pullman green, and a stipe of Imitation Gold. The Lake Whatcom Railway at Wickersham, Washington, has two passenger cars with authentic paint jobs in the streamliner scheme. To get started on a match of this paint, we leveraged the DuPont Centari paint formulas Bill McKown has published in the *Mainstreeter*, Vol. 12, No. 4. We compared this paint to the cars at Wickersham. We found ourselves with few other resources for these colors. While the passenger car paint jobs were in tough shape, the formulas from Bill McKown appeared to be reasonable matches given the artifacts we had to work with.

It is probably quite timely that we produced the color cards when we did, because each time we went to purchase the DuPont Centari paint that was specified by Bill in his *Mainstreeter* article for these two colors, the clerk would mention that the days of Centari availability are limited, as the paint is being phased out and you can't buy it in some states.

Loewy Light Green and Loewy Dark Green

These two Raymond Loewy colors inspired this whole project. The Modeling Committee produced color cards for these two colors in 2008 and while at the Tacoma NPRHA Convention, a few of us standing around the modeling room began to wonder out loud, "Do these look right? Can we do better?" So that fall, Gary Tarbox, Jeff Nichols, Rick Leach, and I got together in Jeff's backyard to compare artifacts. Three years later, the boxes of eighteen Northern Pacific Color Drift Control Cards were presented for sale at the Carlton convention.

The Loewy green paint scheme was applied to the Northern Pacific passenger trains beginning in 1953, including the North Coast Limited (NCL) and the *Mainstreeter*. This paint scheme was applied to some other NP equipment, including some trucks and trailers. The label on an actual paint can used by the Northern Pacific is labeled *Dark Green*, followed by the correct Loewy color code. So we choose Loewy Dark Green and Loewy Light Green for the names, prepending *Loewy* to avoid confusion with any other colors.

For the color match, we relied on several artifacts. Primarily, we relied on some 40-year-old actual NP paint that was salvaged from Como Shops after the BN merger. We had some understandable curiosity as to the integrity of the 40 year old paint, but after spraying out a sample and then comparing it to chips from *NCL* locomotives, the match was *jaw dropping*. But we were just getting started. Here is a list of artifacts that we matched to the Como Shop paint:

- Model trains that were painted with authentic NP paint from South Tacoma shops in 1957
- A card of Dark Green from the Minnesota Train Museum using 40 year old paint separate from the Como Shop paint
- Several paint chips from *North Coast Limited* equipment from Rick Leach
- NCL equipment painted in authentic NP Loewy paint, with patches protected from the elements
- Live Light Green and Dark Green paint from Mike Gelhaus, Spokane, owner of seven *NCL* cars

Based on this triangulation of six very solid reference items, we sent cards with the Como paint to DuPont National Labs for matching to the DuPont Industrial Imron 3.5 system.

Since this was such an important set of colors, we did not stop there. We took the artifacts to the Spokane convention and asked for honest feedback on the chip-to-Imron match, and also feedback on the overall look of the colors from anyone who wanted to comment. We asked for feedback on all the colors. The Light Green needed a slight tweak, but by September we had matches for the Light Green and Dark Green that we were very happy with. We ordered our final gallons of Imron Industrial 3.5 paint, painted out verification samples, and after confirmation by the committee, our work was done. Actually, NPT Gray was the last color to be finalized, but with Loewy Light Green in the books, it was all downhill.

The week we nailed down Loewy Light Green, we received an e-mail from the *Friends of 4449* in Portland, Oregon, who needed to put a paint job on NP Traveller's Rest No. 498. I passed the Imron formulas on to them and this is the result:

Photo by Christopher Frissell

Note also that Loewy Dark Green was applied to bunker-less reefers (RBL) and loader-equipped box cars, along with some other box cars of the Northern Pacific.

Depot Indian Red

NORTHERN PACIFIC RAILWAY COMPANY

ENGINEERING DEPARTMENT

Circular C. E. M. of W. No. 5.

SPECIFICATIONS FOR INDIAN RED STATION PAINT

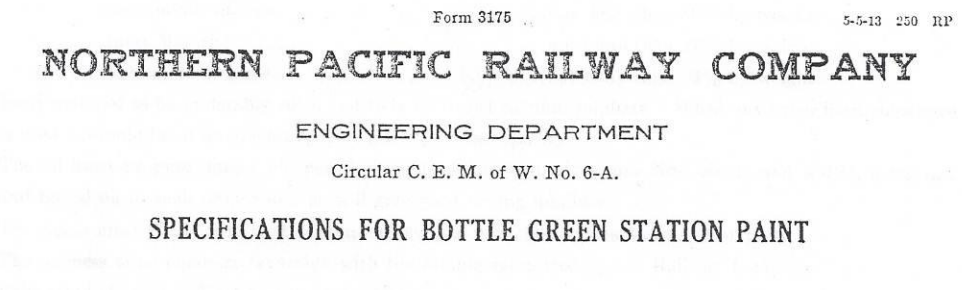
According to the NP Bridges & Buildings Department document *Standard Practice No M-W 203-A Repainting Buildings, Signals, Signs, Etc.,* dated June 20, 1916, Indian Red was to be applied to "Exterior wood or metal surfaces (including boarding under platforms, post girders of shelter sheds), except trimming, roofs and platform." Essentially, Indian Red was applied to the body of the building, and Bottle Green was applied to the trim. Indian Red was the designated color for principle depots and affiliated station buildings from the 1890s to 1943.

To develop a match for Indian Red, we used paint chips from Chuck Soule and Rick Leach, both from the Sprague, Washington, depot. The chips were in very good shape and we were able to verify the color with some lower quality boards from the Lester, Washington, depot. One interesting note about these chips, the NP added sand to the paint to deter people from carving their names in the boards of the depot. The sand made matching the

chips a bit harder, but we reviewed the match as a full committee and even sent the chips to some other depot aficionados for validation, and all agreed the matches were ready for production.

We investigated producing the sea foam green or industrial green used on the inside of some NP depots like Ritzville, but we could not find any official NP documentation on this color and even the paint used in Ritzville was all-over-the-map.

Depot Bottle Green



Form 3175 5-5-13 250 RP

NORTHERN PACIFIC RAILWAY COMPANY

ENGINEERING DEPARTMENT

Circular C. E. M. of W. No. 6-A.

SPECIFICATIONS FOR BOTTLE GREEN STATION PAINT

According to the NP Bridges & Buildings Department document *Standard Practice No M-W 203-A Repainting Buildings, Signals, Signs, Etc.,* dated June 20th, 1916, Bottle Green was to be applied to "Exterior trimmings as follows: Frames, casings, sash, storm sash, stiles, and paneled doors, frieze, base, corner boards, ridge boards or protector, mould brackets supporting eaves, and cornice except plancier." Essentially, Bottle Green was applied to the windows and trim up to 1943. Prior to Bottle Green, a color named Quaker Green was used. We did not produce a card for Quaker Green as we did not have artifacts for matching.

The matching process for Bottle Green was very similar to the process for Indian Red.

Depot Sand and Depot Brown

NP Memos in early 1943 from Bridges & Buildings Supervisor James A. Campbell introduced a major change in the painting of "principle depots and affiliated station buildings." The memo states:

> Body of the depot, including trim and sash, shall be entirely painted sand color, except for a base band of the brown color. The brown base band shall extend from the platform or foundation level to bottom of window sills and shall be carried around entire base of building including single sliding and double doors.

To produce the Depot Sand color card, we had a cornucopia of NP boards painted in Sand paint. So after several reviews, we selected the best master item on which to base our color match. We then sent a sample card to an NP historian who had the only actual surviving NP color card in known existence (proving they did exist!). He confirmed that our match was indeed very good. Compared to a lot of picture books, the color may appear somewhat dark or saturated, but rest assured it's a great match to multiple NP artifacts. In photo books, Depot Sand often appears washed out, unlike the darker, more saturated color that the artifacts and color card reflect.

For Depot Brown, we had fewer NP artifacts that matched this color, but we did find two from separate depots that really jumped out as great items to match to. Developing the Depot Sand and Depot Brown matches was not easy, as we found the computer matching system at Sherwin-Williams unsatisfactory. We ended up spending hours in the Sherwin-Williams store and parking lot (for the sunlight) tweaking and drying paint samples over and

over again. The whole process involved fifteen to eighteen trips to the paint store to get the four depot colors just right. After eventually developing a match to the Depot Brown boards we conferred as a group on the match and Depot Brown was finished.

Aaron Gjermundson used the Sherwin-Williams paint formulas to paint his NP layout room:

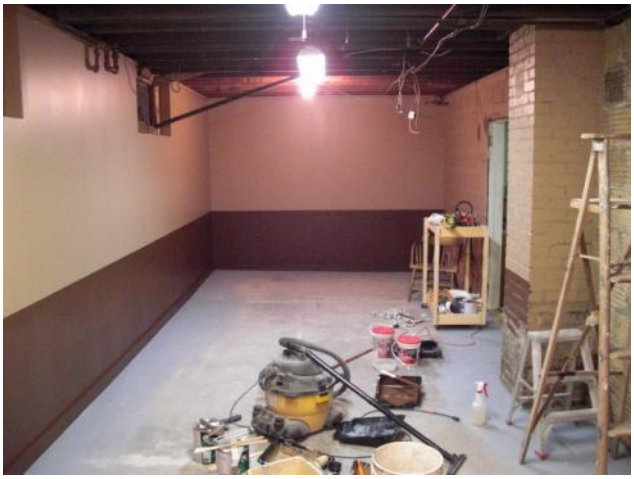


Photo by Aaron Gjermundson

Wrap Up

All the paint formula/labels for the colors researched in this project are posted on the Research pages of the NPRHA's Web site—www.NPRHA.org in the Modeling section. Additionally, we will be posting a large set of photographs related to this project and some Northern Pacific documents related to color.

Below is a table of compiled paint code numbers for some of the colors we researched in this project, and some we did not. Every effort has been made to ensure the accuracy of this table (double and triple verified), but sources for these codes will sometimes conflict with each other, so it's presented as-is.

	DuPont Paint Brand		
	Duco	**Dulux**	**Lucite**
Rough Decades of Usage	*1930-1940's*	*1940-1960's*	*1960's*
Black	**254-2234**	**88-762**	**890-67104**
Imitation Gold	**254-54388**	**95-056**	**890-54015**
Red (Monad, stripe)	**254-9089R**	**88-394**	**890-394**
Yellow (handrails, steps)		**81-9655**	**890-23663**
Green Cab Interior (GPs, U-boats)		**68-24557**	
Suede Gray Hood Interior (F-units)		**83-503**	
Loewy Light Green	**254-57927**	**83-11736**	

Loewy Dark Green	**254-57926**	**83-9008**	
Loewy White For Stripe		**83-508**	
Loewy White For Lettering		**95-001**	
Loewy Black for Trucks, Other		**88-762**	
1947 Passenger Pullman Green	**254-35441**	**83-9008**	
1947 Passenger Light Green	**254-54845**	**83-11736**	
1947 Passenger Imitation Gold	**254-54015**		
NPT Dark Blue		**83-035**	
NPT Gray		**83-5506**	

You might ask why we chose to not produce some of the other Northern Pacific colors that might come to mind, such as the green or gray used in cab interiors, gray colors used on NP hoppers, locomotive boiler gray, or other colors. The main reason was a lack of artifacts to verify the color formula against; we always endeavored to have more than one source for the color information. Additionally, you can't buy Duco, Dulux or Lucite paint anymore. The gray colors commonly used on hoppers were often standard colors from either the paint company or the car manufacturer, not necessarily an exact color for which the NP had a standard. And frankly, at eighteen colors, we had exhausted our endurance for additional colors. Maybe in twenty years, we will take a second run at it.

This project was a direct result of some tremendous cooperation and input from many, many NPRHA members. If you get a chance, please thank any or all of these individuals for their contributions:

Rick Leach—this project would not have happened without Rick's contributions of artifacts, documents, wisdom, NP knowledge and *paint booth*

Bill McKown—invaluable paint samples and paint formulas, advice and lots of great general information and guidance

Jeff Nichols—Jeff contributed his expertise in color matching and many, many hours of general help

J. R. Cannon—Son of Chief Mechanical Officer Jesse A. Cannon, who sent us two Gerber Baby Food bottles of actual NP Loewy paint from the 1960s.

Tim Repp—several artifacts for color matching and feedback on matches

Gary Tarbox—Gary contributed general guidance and several leads to artifacts and additional resources

Frank and Robert Culp—of the Lake Whatcom Railway for letting us poke around their wonderful NP equipment. We have paint formulas for you Frank!

Eric Hopp—of the MTM sent a wonderful painted card of Loewy dark green

Mike Borkan—copies of NP documents from the Jackson Street Archives, help at the Carlton convention

Jim Dick—copies of NP documents from the Jackson Street Archives, other general information

Bob Makins—help with NPT sign and other input on matches

Larry Schrenk—information, observations, and background on several colors

Bill Petryk—for donating the aluminum covered stock paper to the NPRHA

Bill Kuebler—for his deep knowledge of *NCL* painting schemes and dates

Bill Loew—for presenting train models painted with authentic Loewy paint from South Tacoma shops

Gary Wildung—copies of NP documents and useful input at the Spokane convention

Jan Taylor—for her support, advice and encouragement on this project

Ken Vogel—for processing, with patience, our numerous production receipts.

NPRHA Modeling Committee—for advice and input on color names and other logistics

The production crew!—These individuals helped stamp 6,000 cards, stuff over 3,000 envelopes, and fill 400 boxes over roughly four production sessions in my chilly garage: Kent and Kyle Sullivan, Gary Tarbox, Rick Leach, Jeff Nichols, Don Larson, Ed Sherry, Dave Hillard and my three kids. Thanks all!

Finally, we sent Color Drift Control Card boxes to forty five manufacturers of model railroad equipment. Here are a few of the comments we received back (note these have been edited for brevity):

> Mike and I received the NPRHA paint chips that you sent earlier this week—Thank you very much! These are sure to be a great help on future NP projects.
> Thank you,
> Craig Walker, Athearn Trains

I was very happy to receive the NPRHA colour drift cards in the mail, much appreciate it. These are excellent reference items and very professionally made and presented. Kudos go out to your team and the Association.
Regards,
Nick Molo, Moloco Trains

Thank you for sending ExactRail, LLC a set of Northern Pacific Color Drift Control Cards. We value contributions of this kind a great deal, and we share your hope that this project will encourage others associations to engage in similar projects. It is my intention to offer models which are authentic to the prototypes they represent. I look forward to doing so with Northern Pacific freight cars in the future.
Best regards,
Blaine Hadfield
Vice President, Product, ExactRail, LLC

Thank you very much for the set of Northern Pacific Color Drift Cards. They will be very helpful going forward with new NP projects. <<edit>> Thanks again for this invaluable research tool, I too hope that other Historical and Technical Associations and Societies will take on similar projects.
Best regards,
Dave Ferrari
President, DeLuxe Innovations

END