AXLE COUNTER PROVEN BLOCK PANEL

IS A NEW ADDITION IN THE TOKENLESS BLOCK INSTRUMENTS USED ON SINGLE LINE

THEY ARE OF TWO TYPES:

1. **UFSBI (UNIVERSAL FAIL SAFE BLOCK INTERFACE)**
2. **SSBPAC (D) [SOLID STATE BLOCK PROVING BY AXLE COUNTERS]**

SALIENT FEATURES OF SSBPAC AND UFSBI

1. NON-CO-OPERATIVE

2. LAST VEHICLE DETECTION IN BOTH SINGLE & DOUBLE LINE SECTIONS

3. BLOCK SECTION PROVIDED WITH BLOCK PROVEN BY AXLE COUNTER (BPAC) TO VERIFY OCCUPATION OR CLEARANCE

1. **TRAIN ENTRY/EXIT BUZZER RECEIVED AT BOTH ENDS.**
2. **SNK & SNOEK INDICATIONS AVAILABLE TO INDICATES LSS, FSS, CONTROLS ARE NORMAL**
3. **CHANGE IN PRECEDURE FOR CANCELATION OF LINE CLEAR:-**

1. **BLOCK INSTRUMENT AUTOMATICALLY GOES TO LINE CLOSED POSITION WITHOUT ANY OPERATION, AFTER COMPLETE ARRIVAL OF TRAIN AT THE RECEIVING STATION.**

2. **DUE TO ANY REASON IF ANY VEHICLE ENTERS BLOCK SECTION, SECTION BUZZER STARTS ALONG WITH LINE OCCUPIED AND TO BE ACKNOWLEDGED BY BOTH.**

PARTS OF

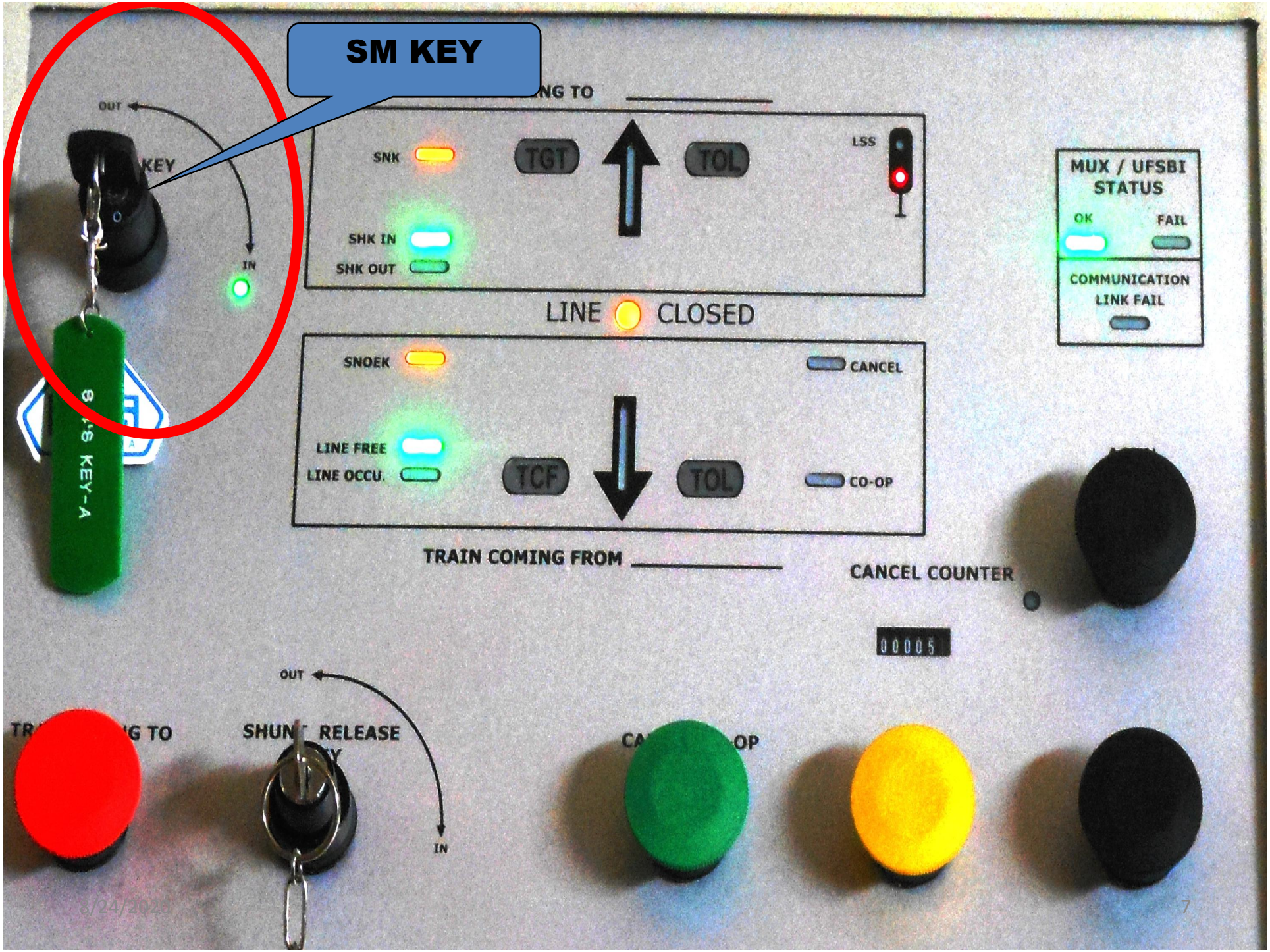
SSBPAC (Single line)

[SOLID STATE BLOCK PROVING BY AXLE COUNTERS] &

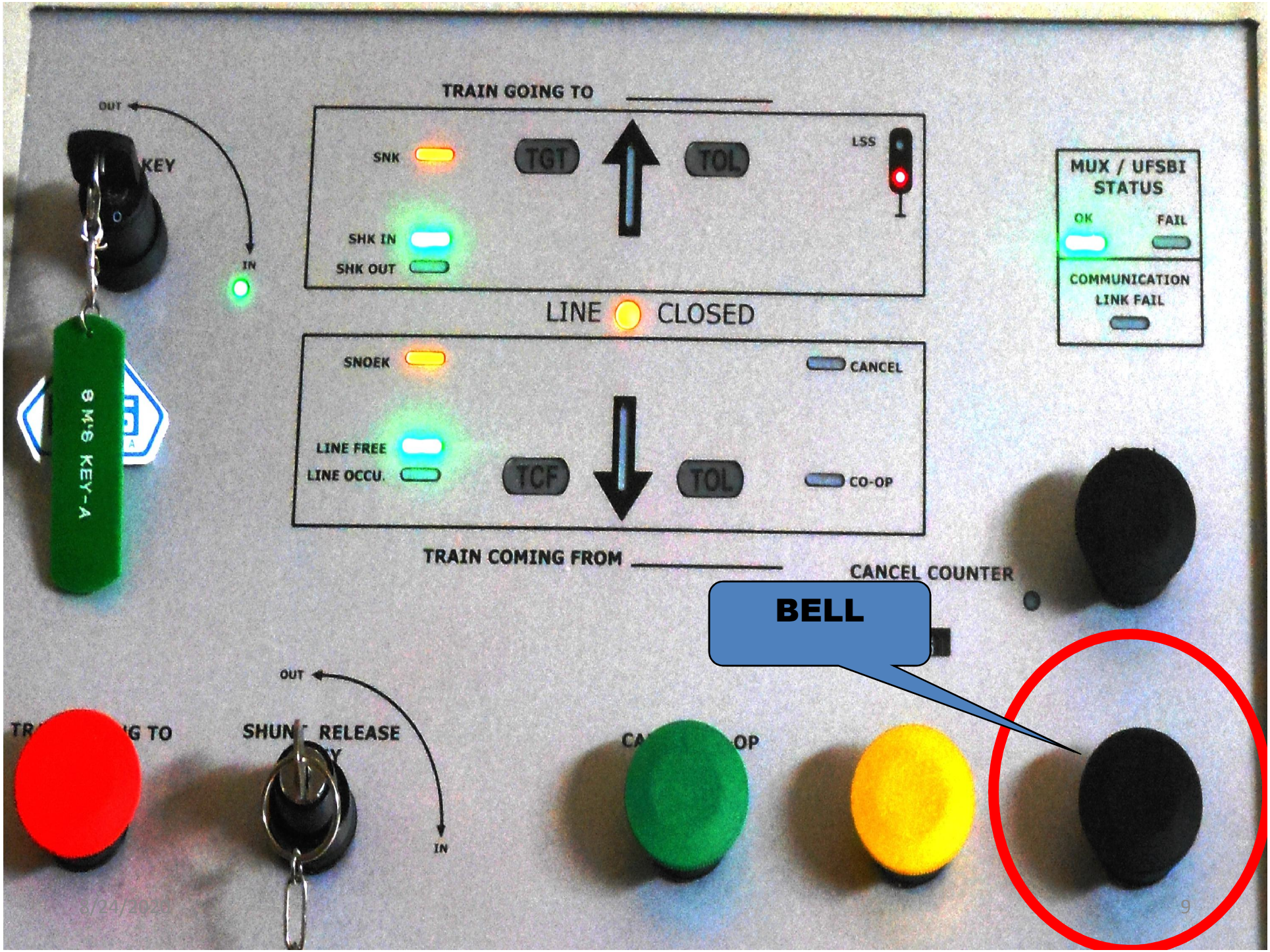
UFSBI

[UNIVERSAL FAIL SAFE BLOCK INSTRUMENTS)

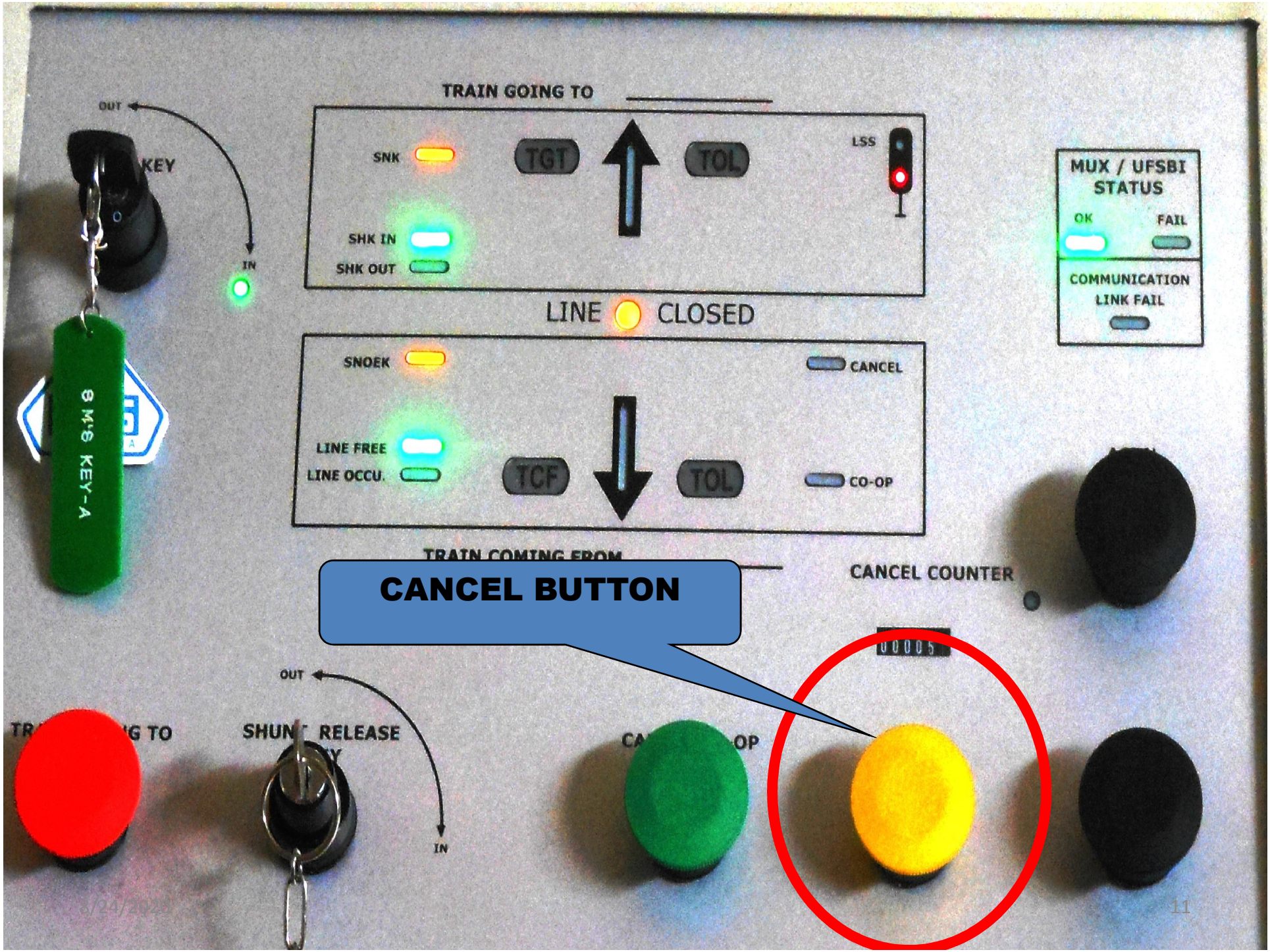
BLOCK INSTRUMENTS

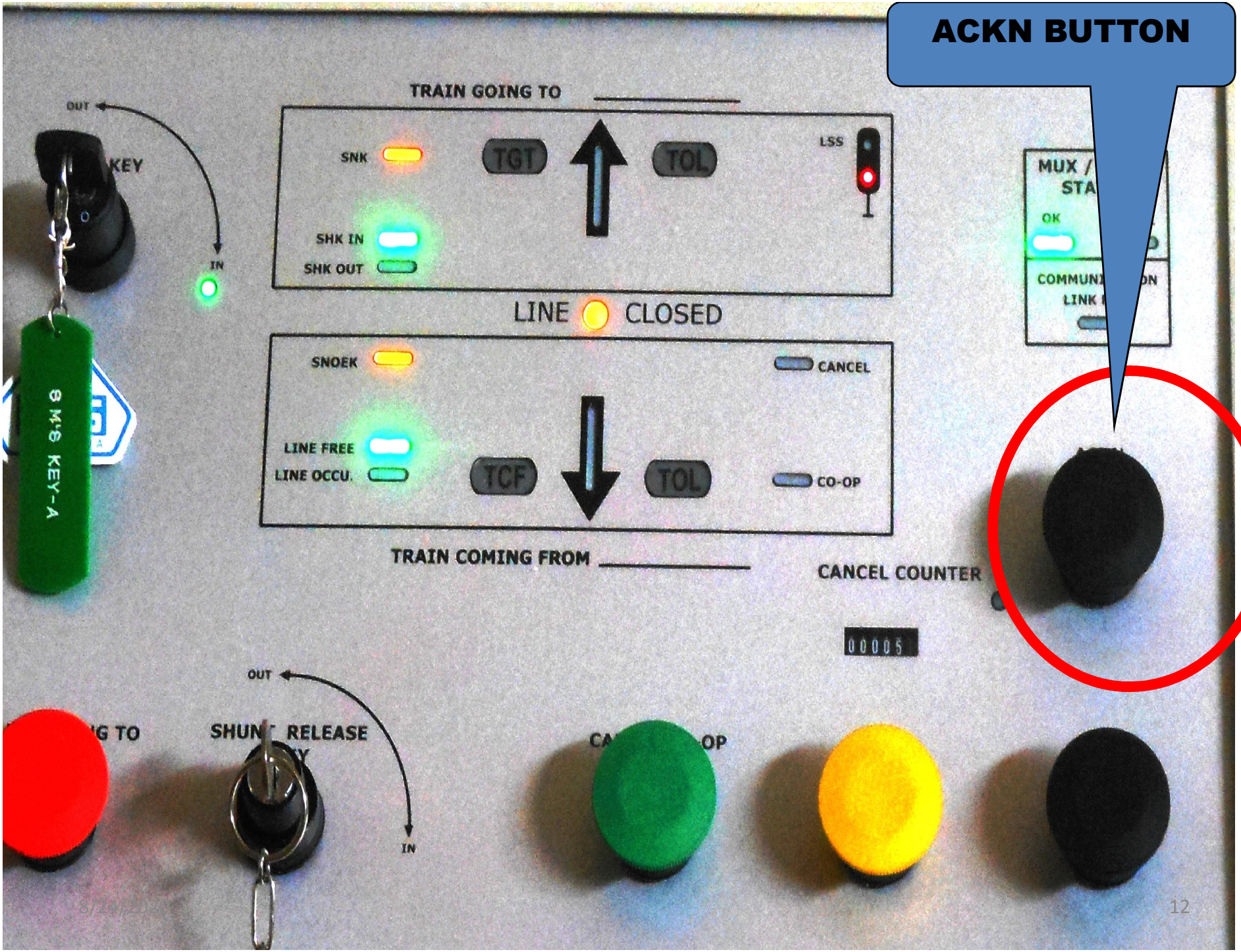

SM KEY
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN

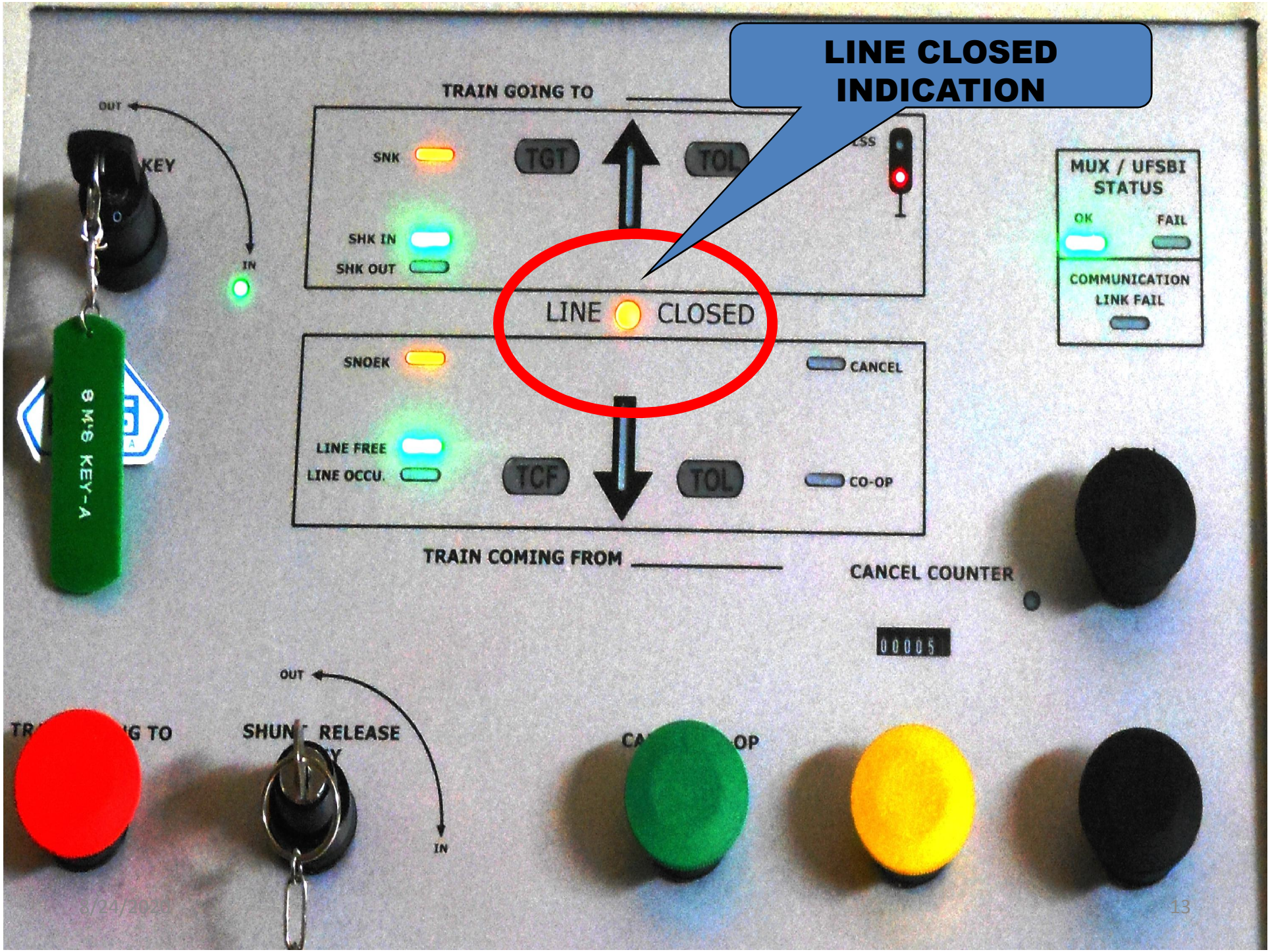

TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
SHUNT RELEASE KEY
OUT
IN

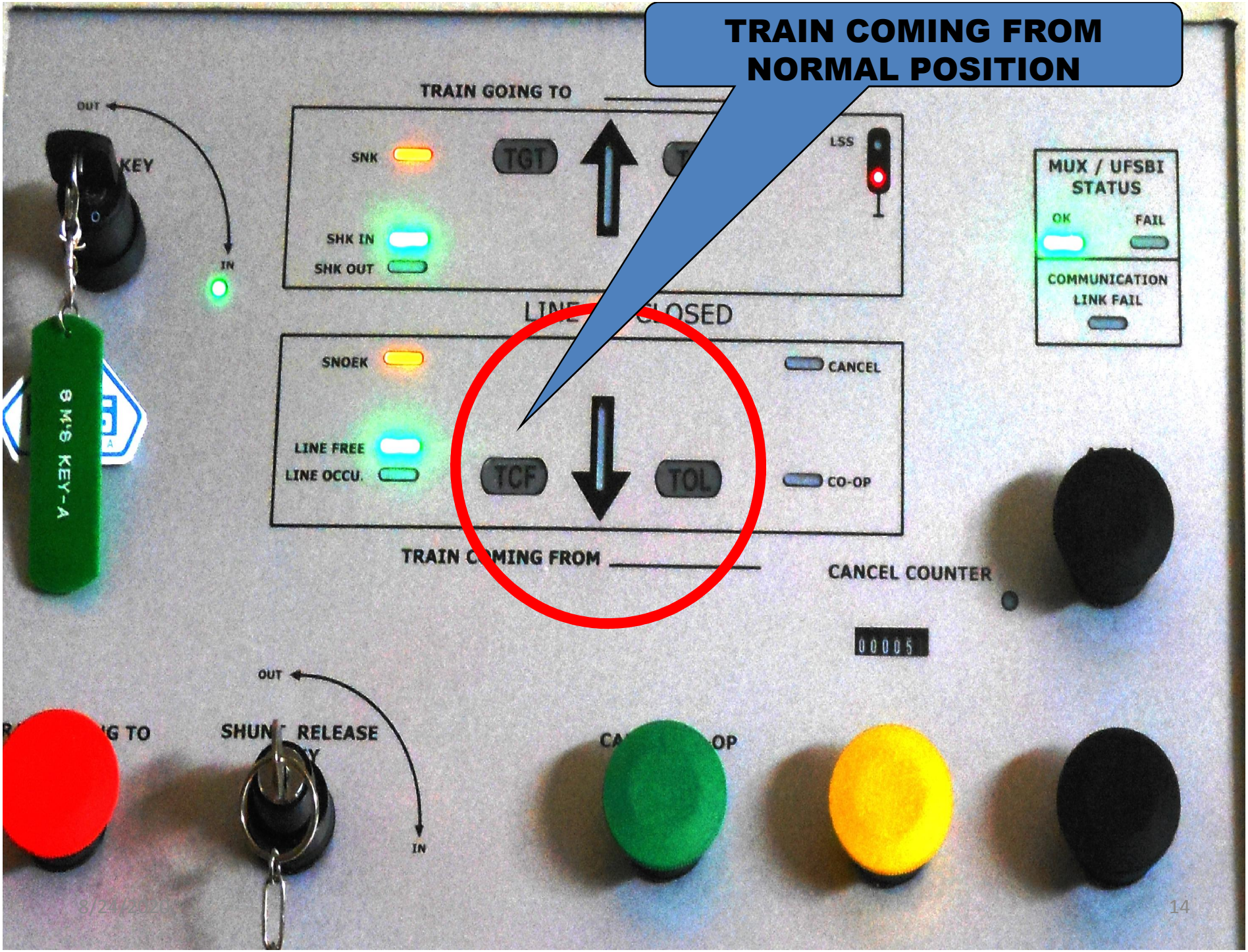

TRAIN GOING TO
OUT
KEY
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
BELL
OUT
SHUNT RELEASE KEY
IN

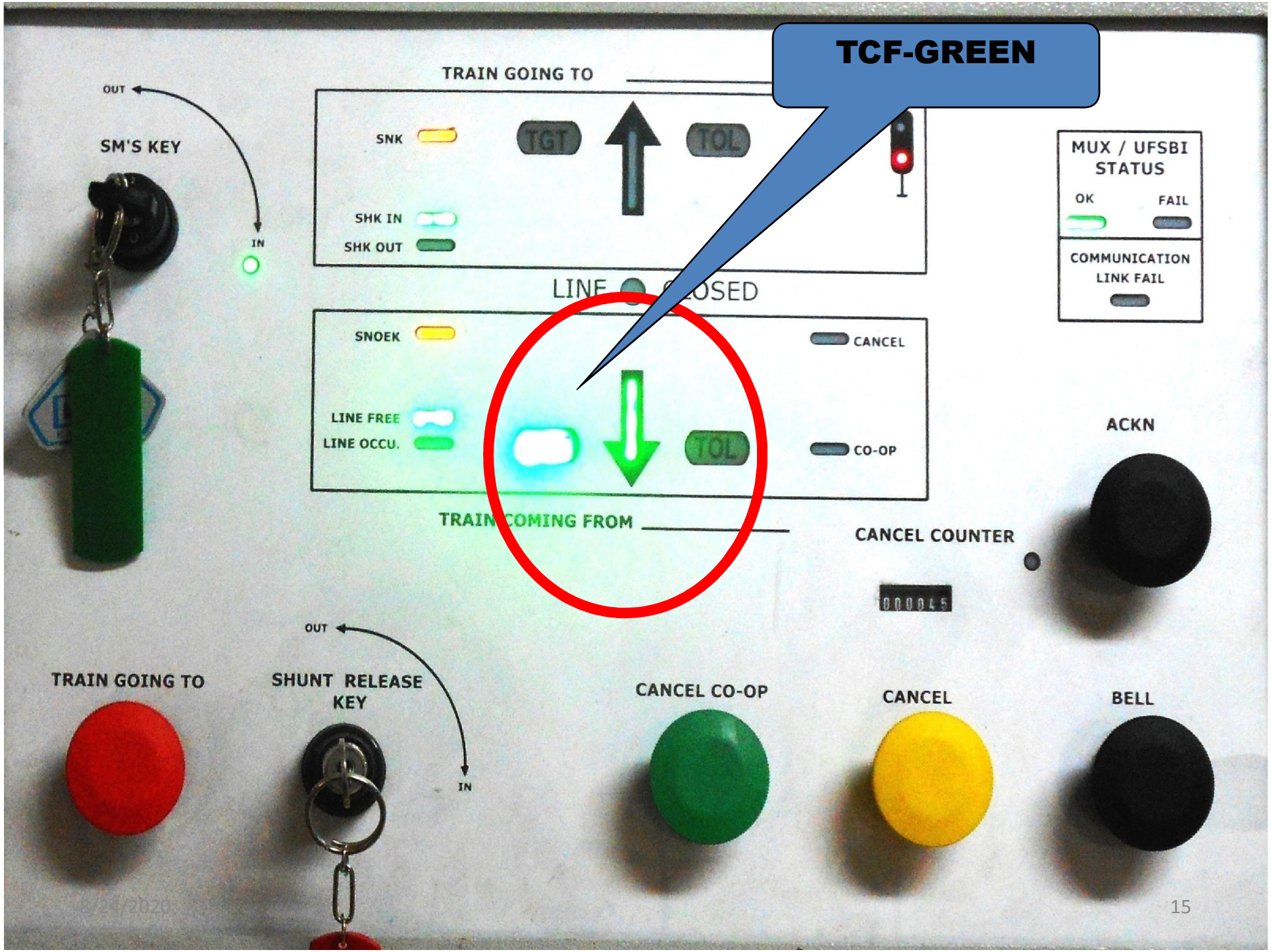

TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
TRAIN GOING TO BUTTON
OUT
IN


TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
CANCEL BUTTON
OUT
IN
RELEASE

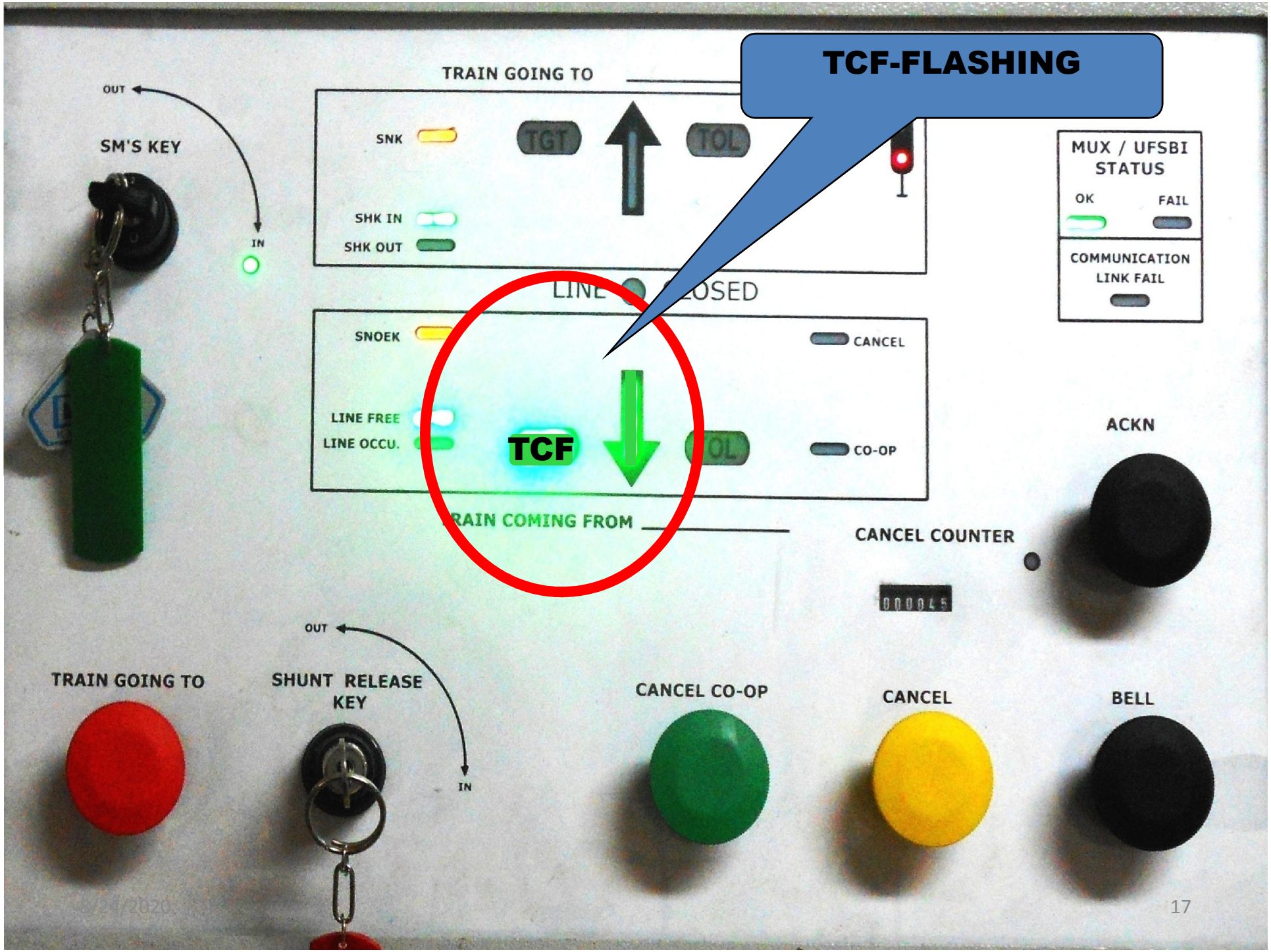

ACKN BUTTON
TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
8 MS KEY-A


LINE CLOSED INDICATION
TRAIN GOING TO
SNK
TGT
TOL
SHK IN
SHK OUT
LINE CLOSED
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
KEY
SHUNT RELEASE KEY
OUT
IN

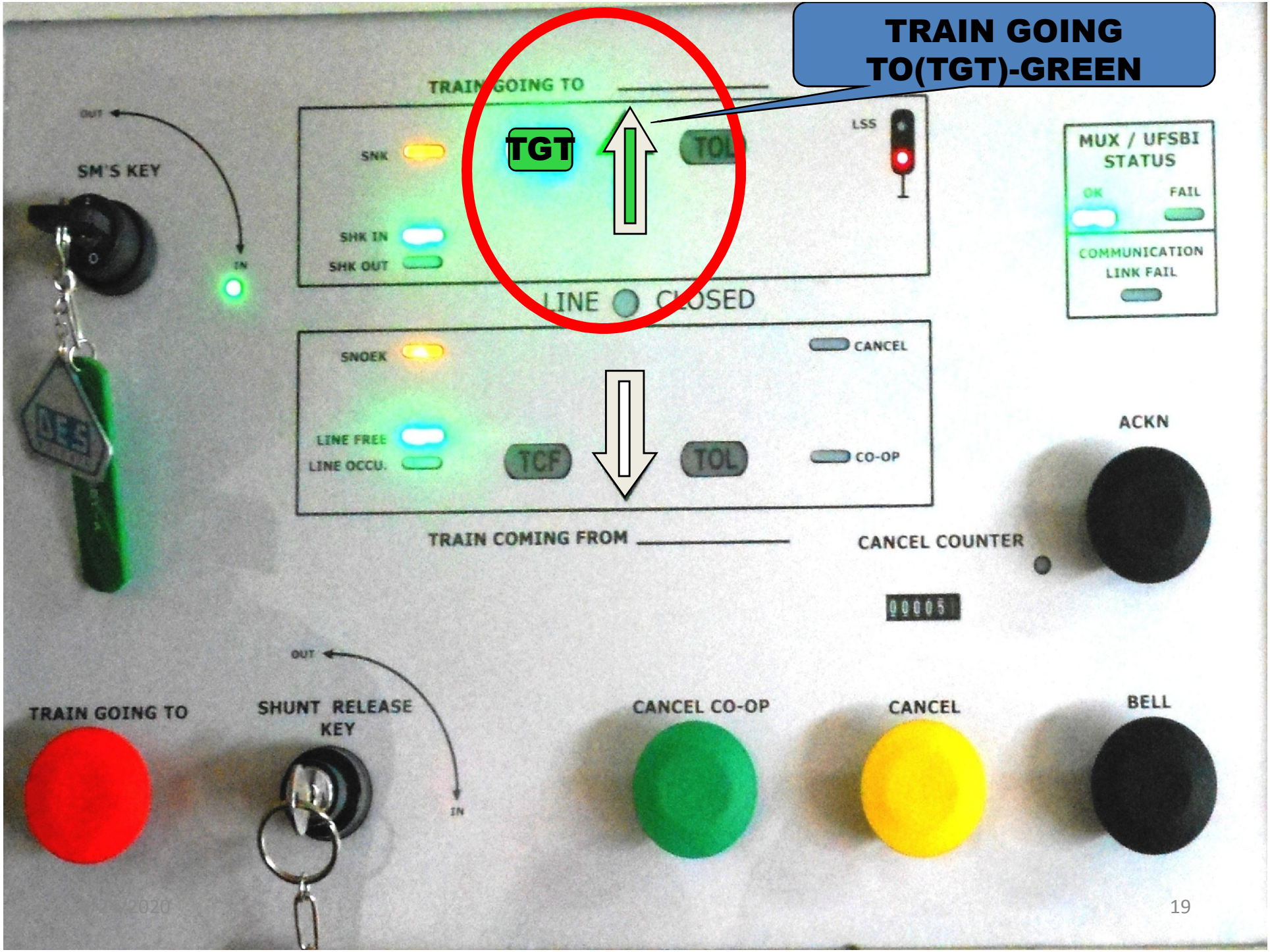

TRAIN COMING FROM NORMAL POSITION
TRAIN GOING TO
OUT
IN
SNK
TGT
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
SHUNT RELEASE
IN


TCF-GREEN
TRAIN GOING TO
OUT
SM'S KEY
IN
SNK
TGT
TOL
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TOL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
000045
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

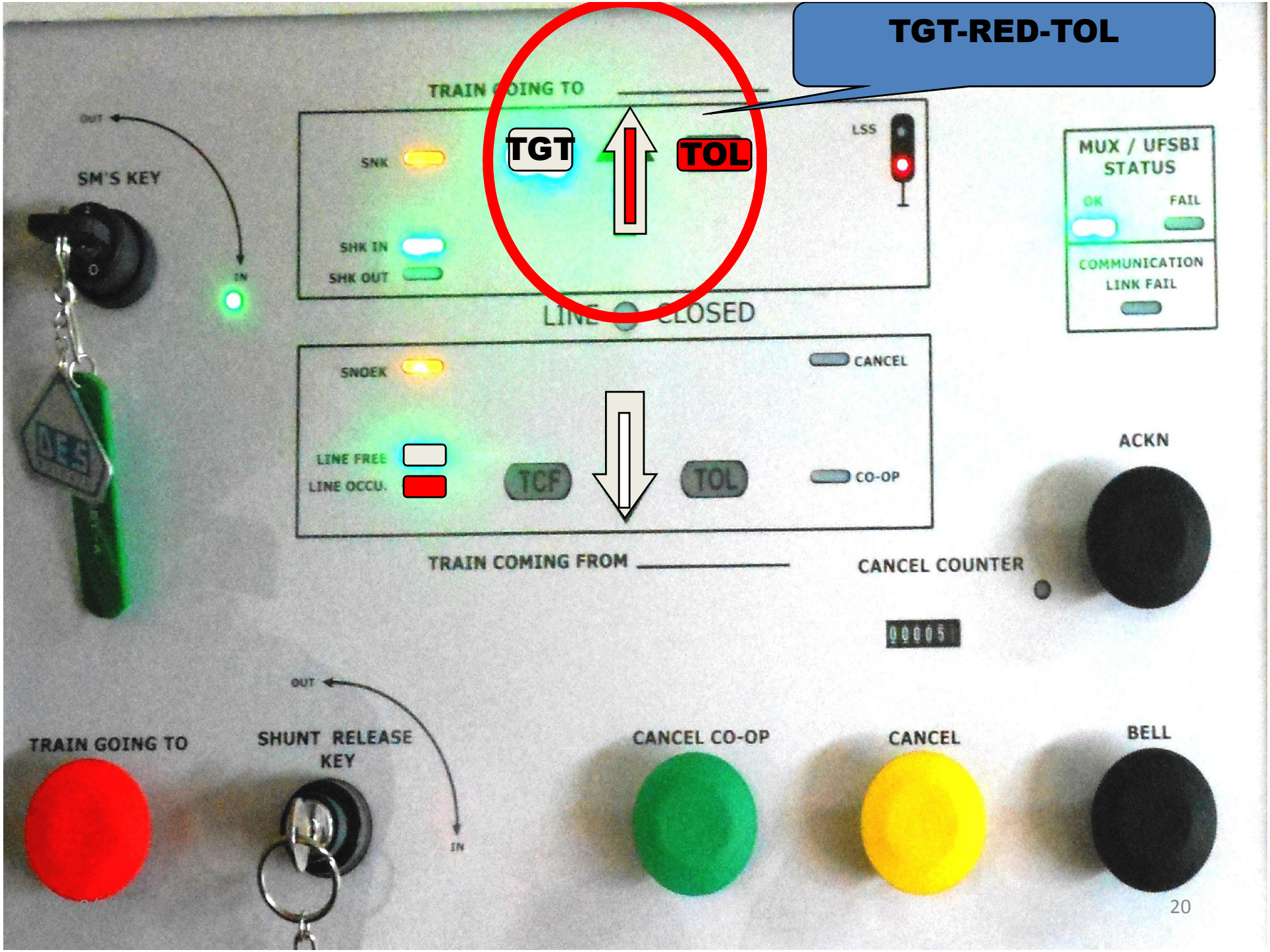

TCF-TOL(RED)
TRAIN GOING TO
SM'S KEY
OUT
IN
SNK
TGT
TOL
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU
TCF
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
ACKN
TRAIN GOING TO
SHUNT RELEASE KEY
OUT
IN
CANCEL CO-OP
CANCEL
BELL

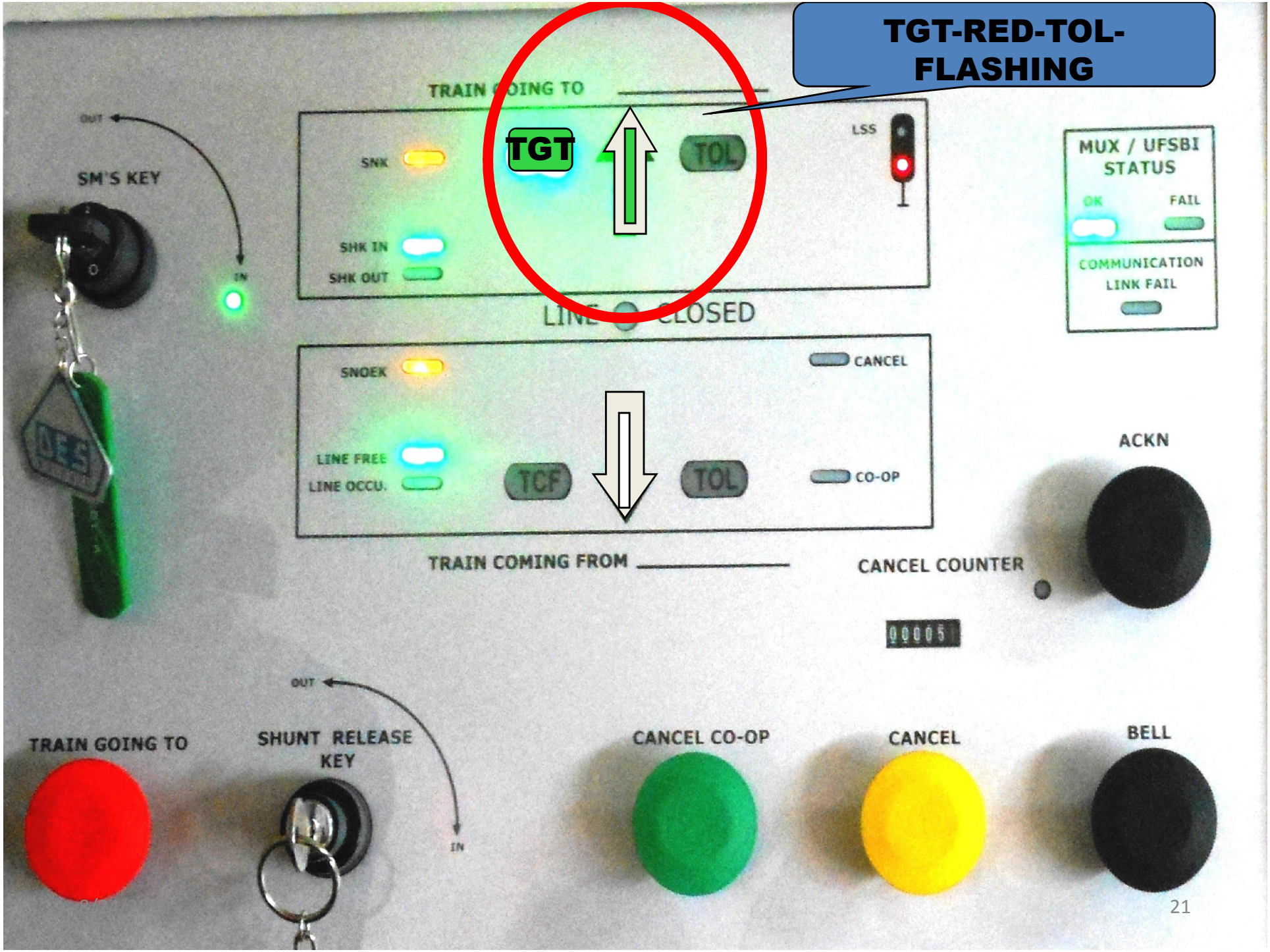

TCF-FLASHING
TRAIN GOING TO
OUT
SM'S KEY
IN
SNK
TGT
TOL
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
OL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
000045
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

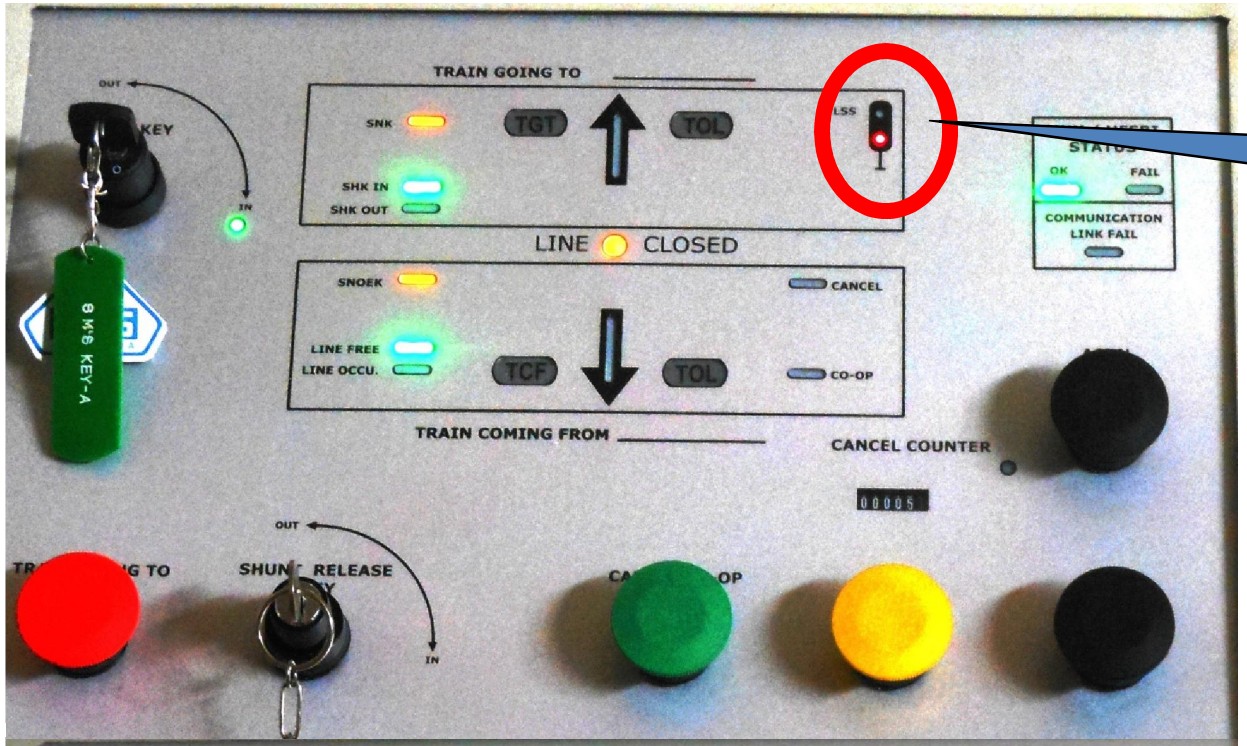

TGT BUTTON
TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
SHUNT RELEASE
IN



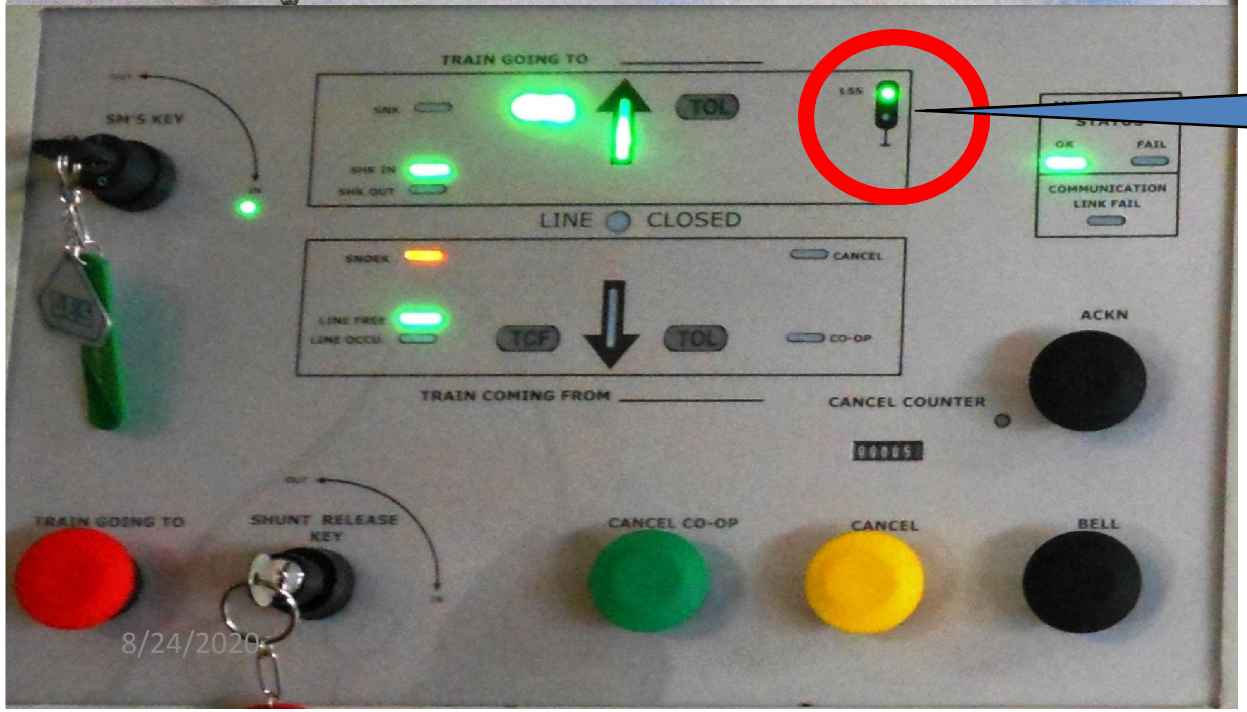
TRAIN GOING TO(TGT)-GREEN


TGT-RED-TOL
TRAIN GOING TO
TGT
TOL
SNK
SHK IN
SHK OUT
LSS
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
OUT
SM'S KEY
IN
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

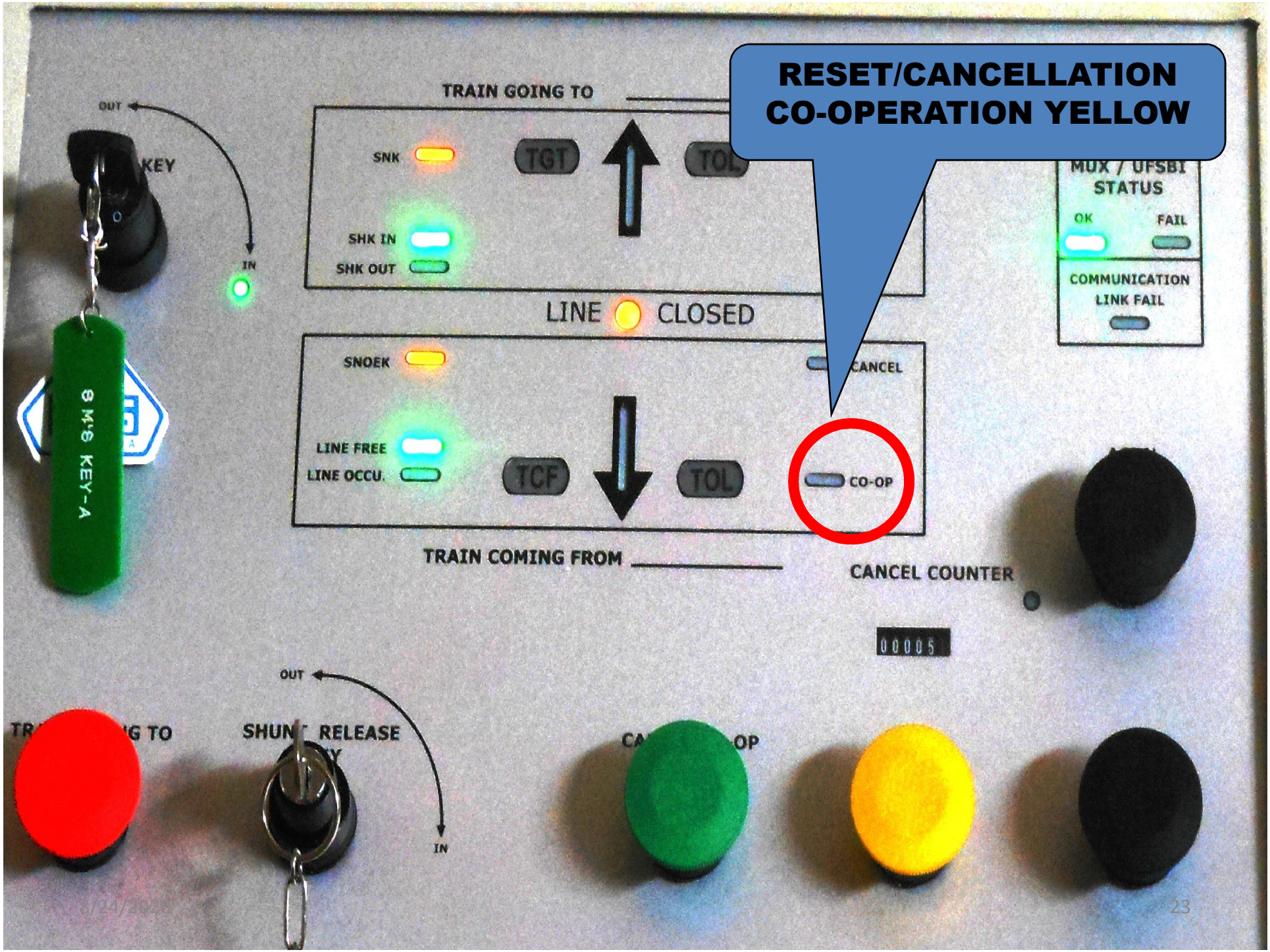

TGT-RED-TOL-FLASHING
TRAIN GOING TO
TGT
TOL
SNK
SHK IN
SHK OUT
LSS
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
OUT
SM'S KEY
IN
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

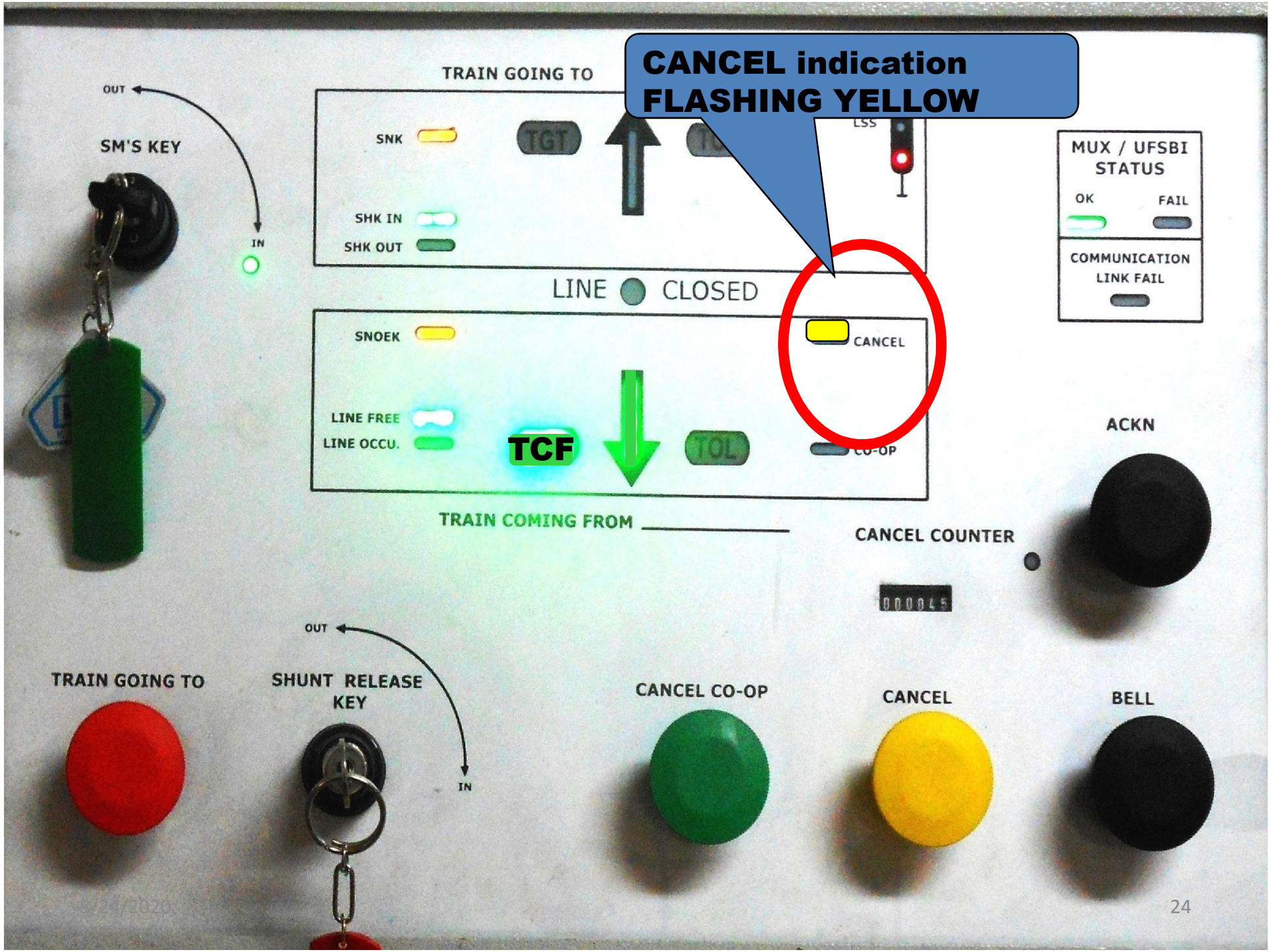


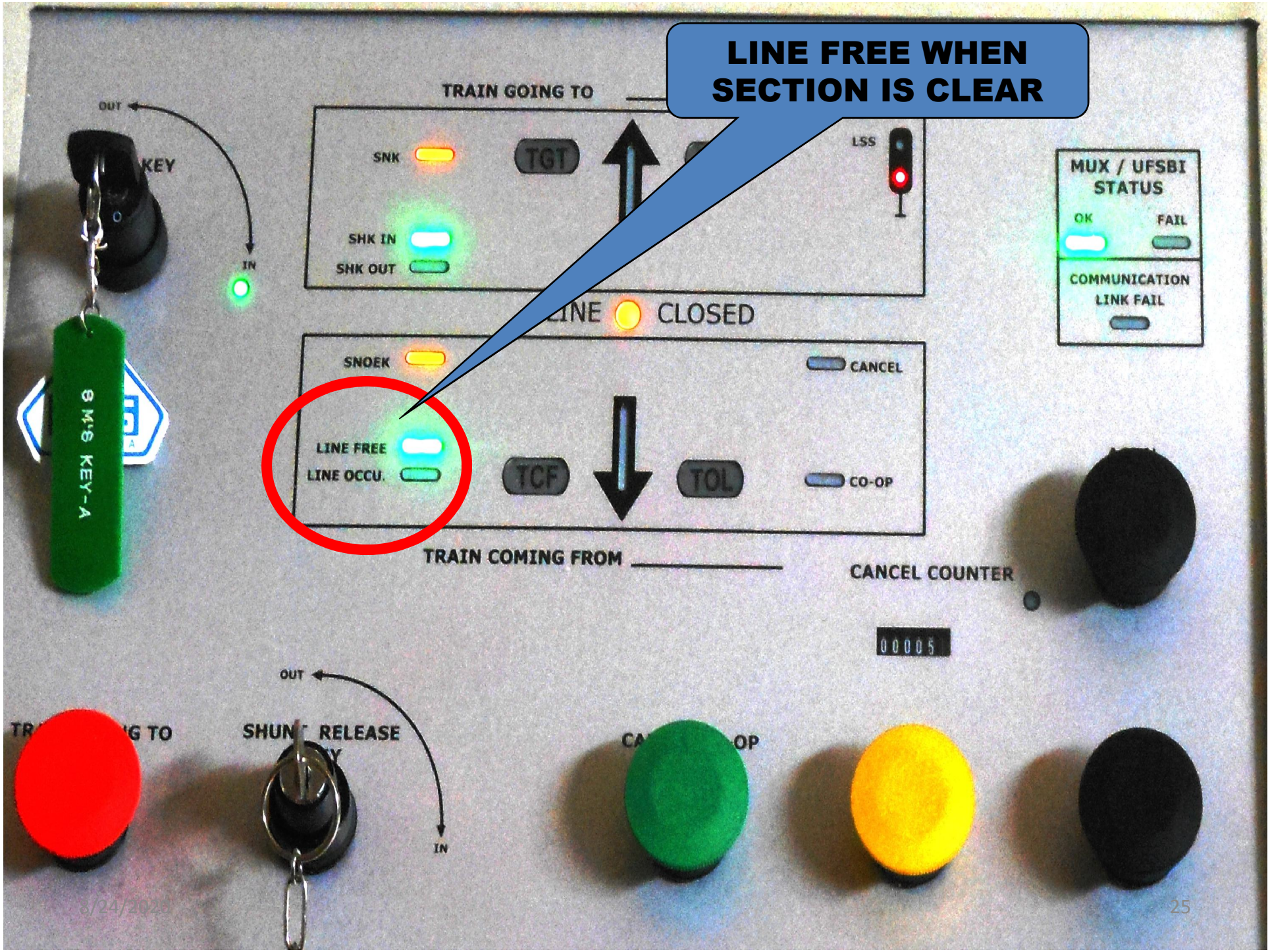
LSS IN ON POSITION

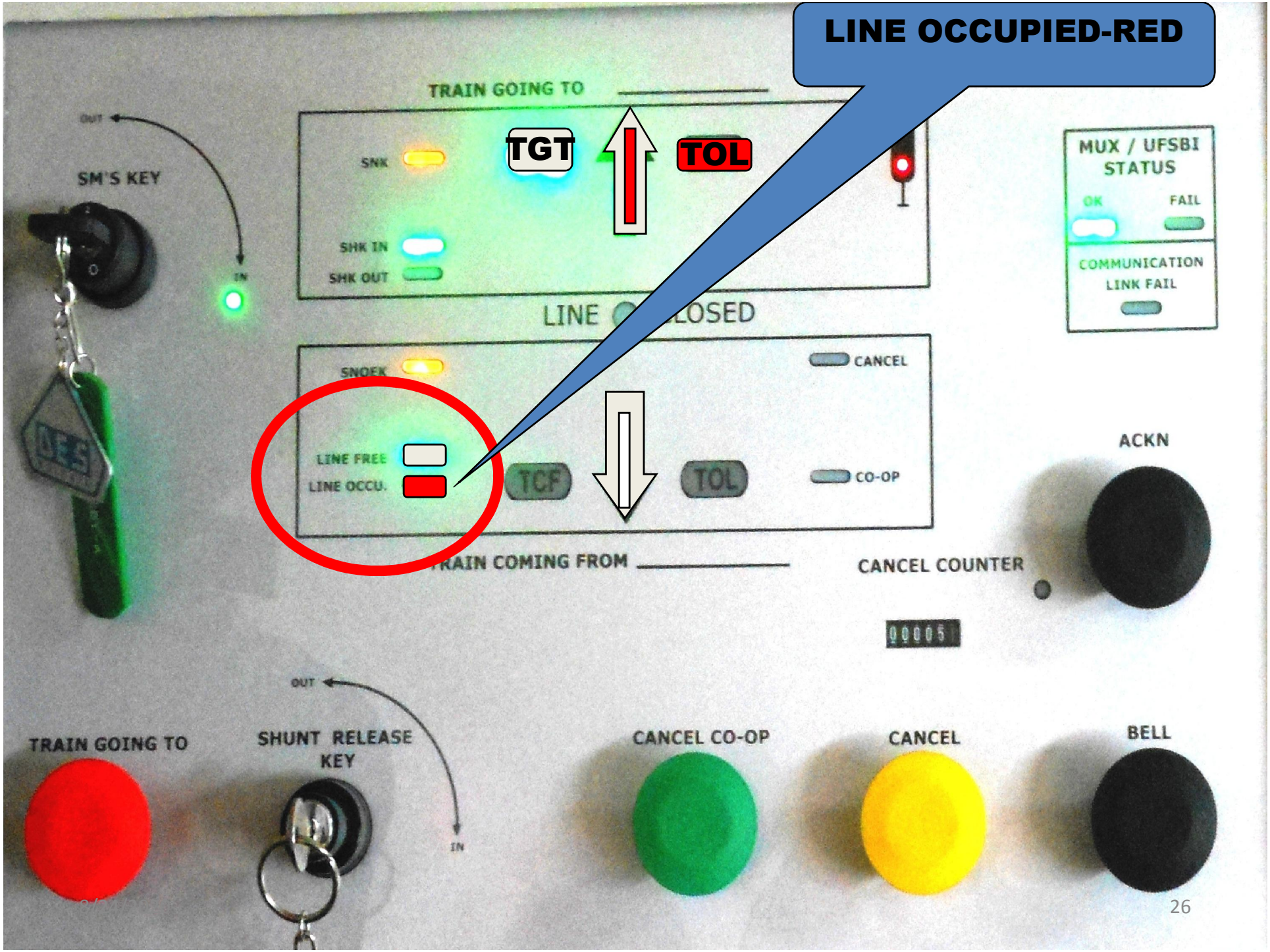


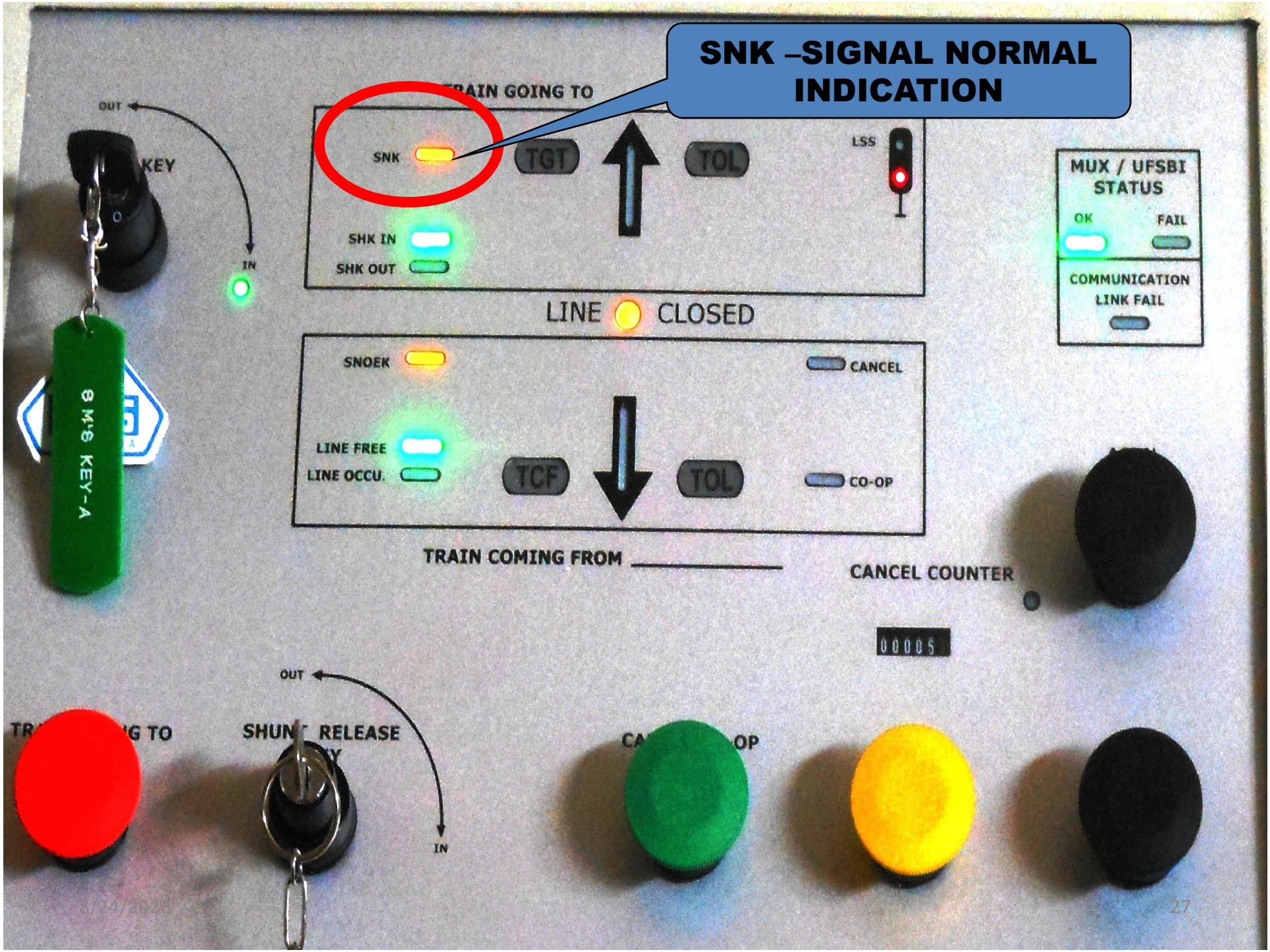
LSS TAKEN OFF IN TGT CONDITION

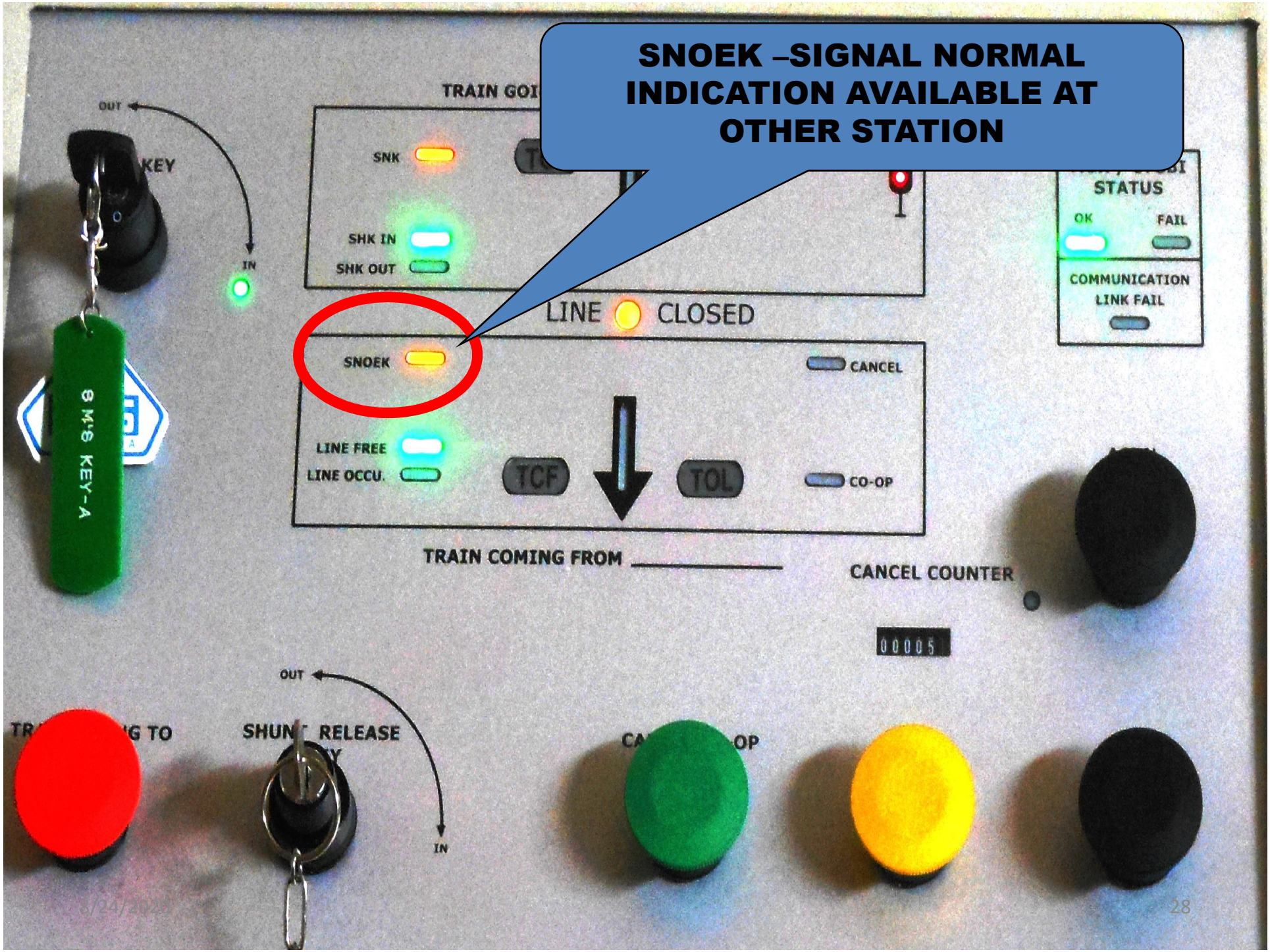

RESET/CANCELLATION
CO-OPERATION YELLOW
TRAIN GOING TO
SNK
TGT
TOL
SHK IN
SHK OUT
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
CANCEL COUNTER
00005
OUT
IN
KEY
SHUNT RELEASE KEY
OUT
IN

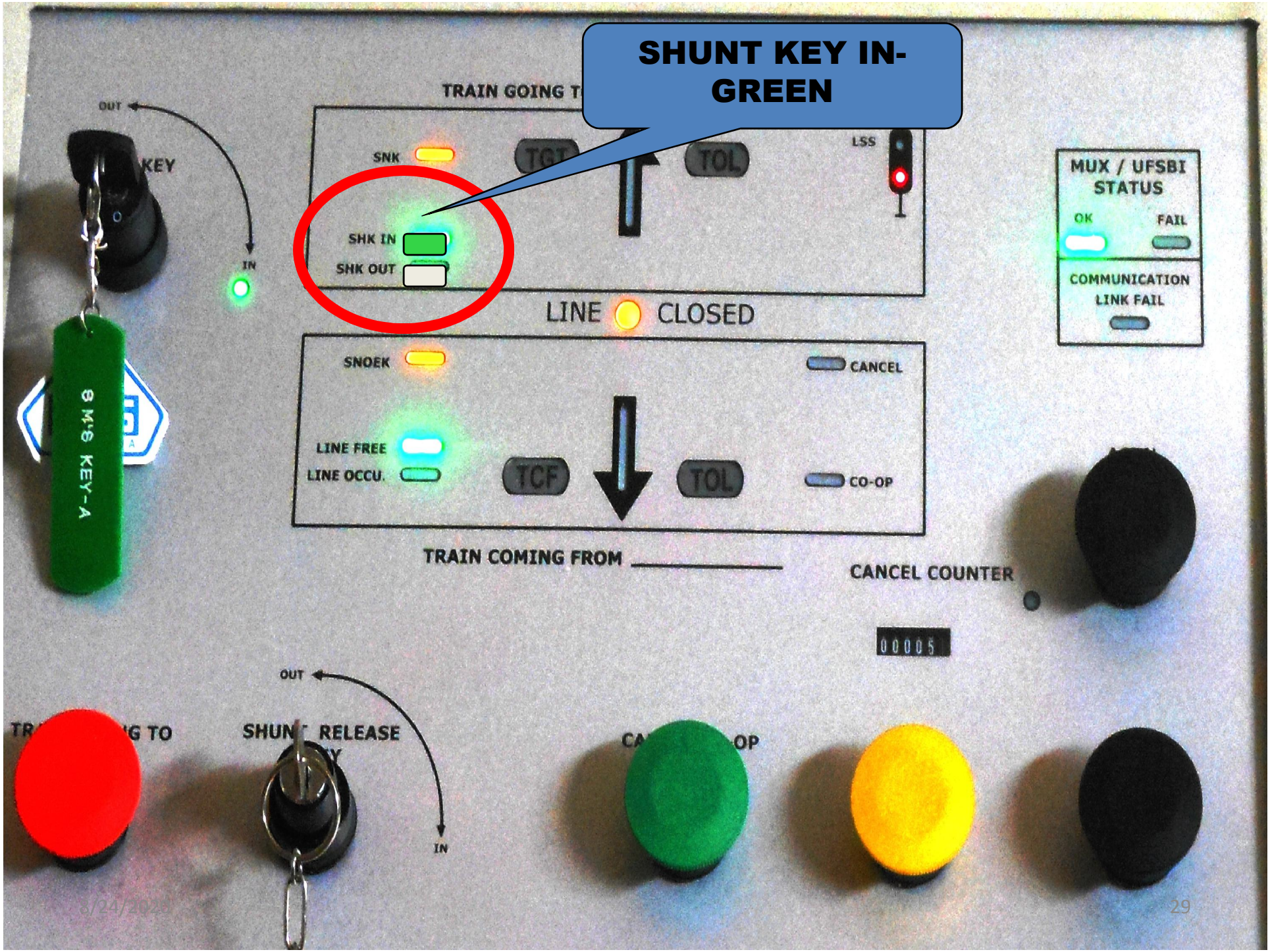

CANCEL indication
FLASHING YELLOW
TRAIN GOING TO
OUT
SM'S KEY
IN
SNK
TGT
SHK IN
SHK OUT
LSS
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
000045
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

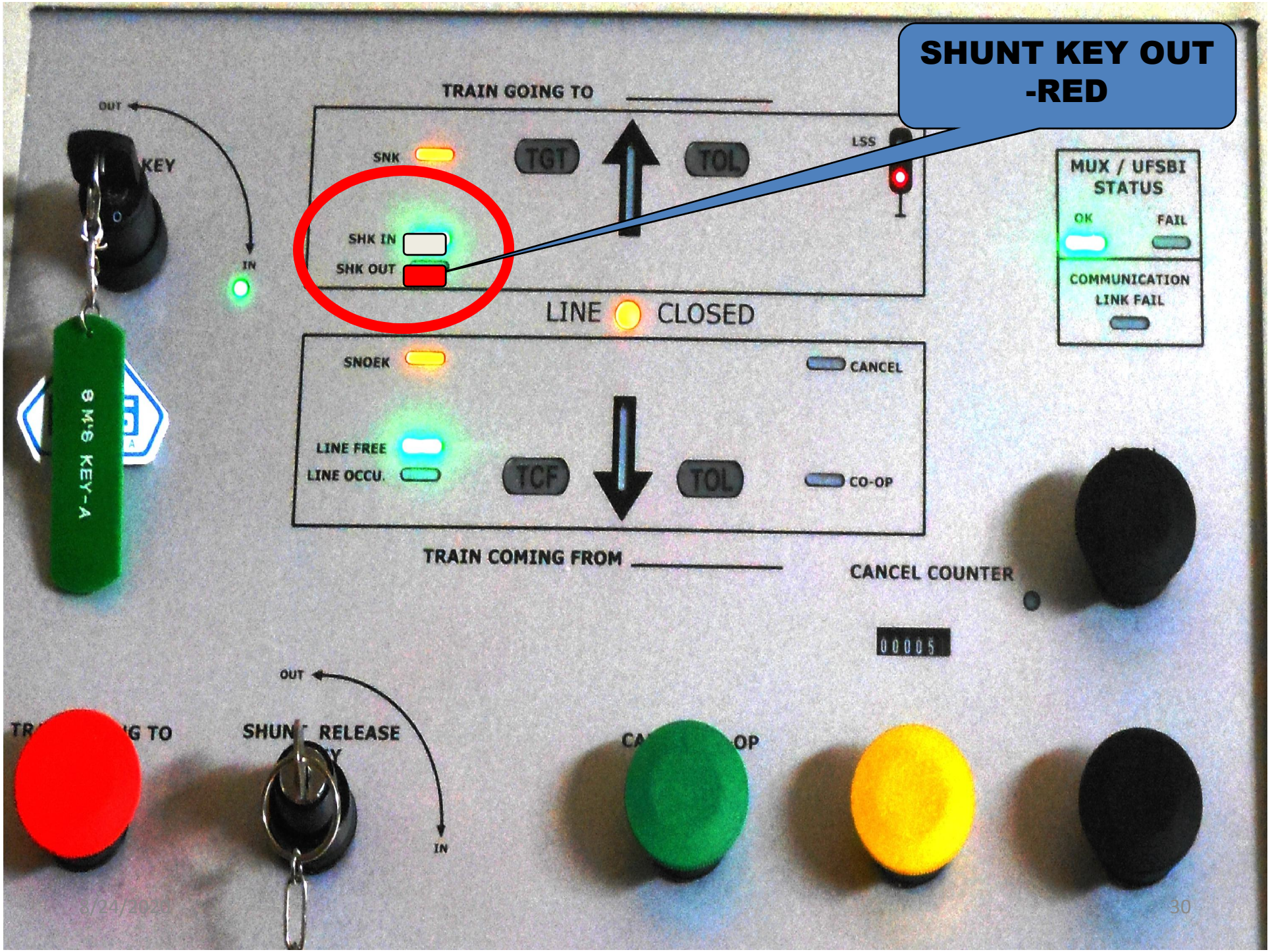

LINE FREE WHEN SECTION IS CLEAR
TRAIN GOING TO
OUT
IN
SNK
TGT
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
RELEASE

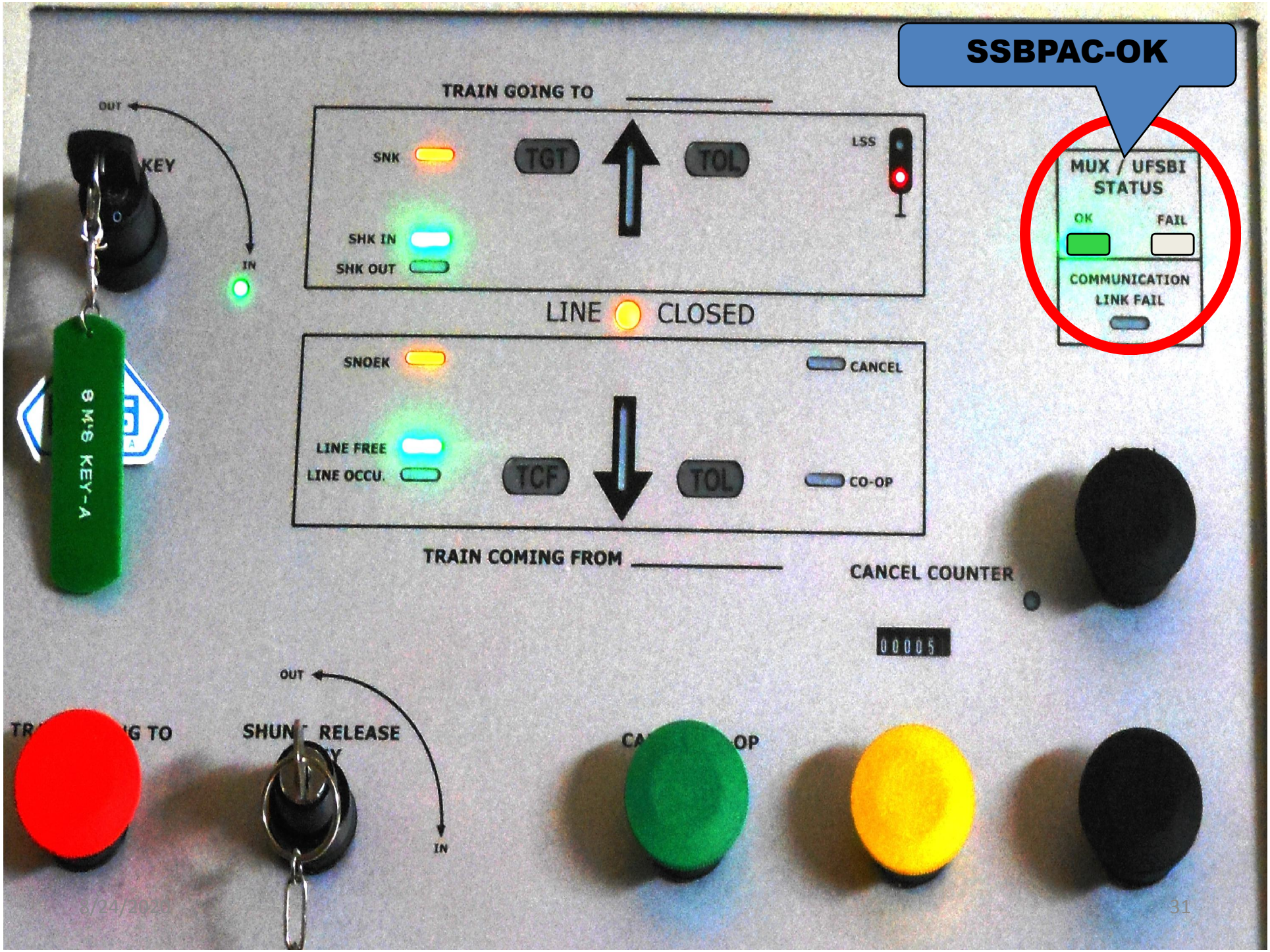

LINE OCCUPIED-RED
TRAIN GOING TO
SNK
TGT
TOL
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
OUT
SM'S KEY
IN
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
ACKN
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
TRAIN GOING TO
SHUNT RELEASE KEY
IN
CANCEL CO-OP
CANCEL
BELL

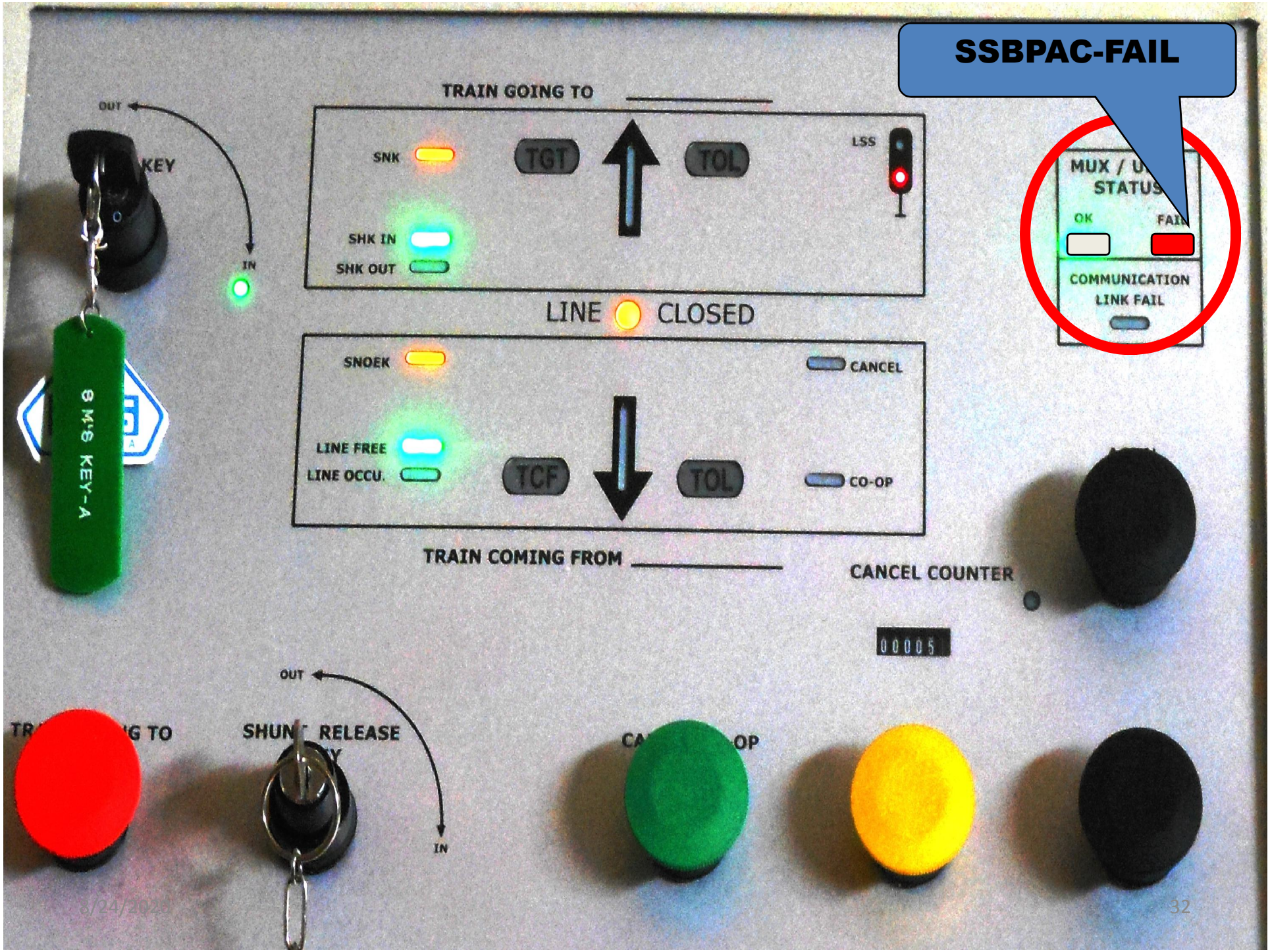

SNK –SIGNAL NORMAL INDICATION
OUT
KEY
IN
TRAIN GOING TO
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
SHUNT RELEASE
IN

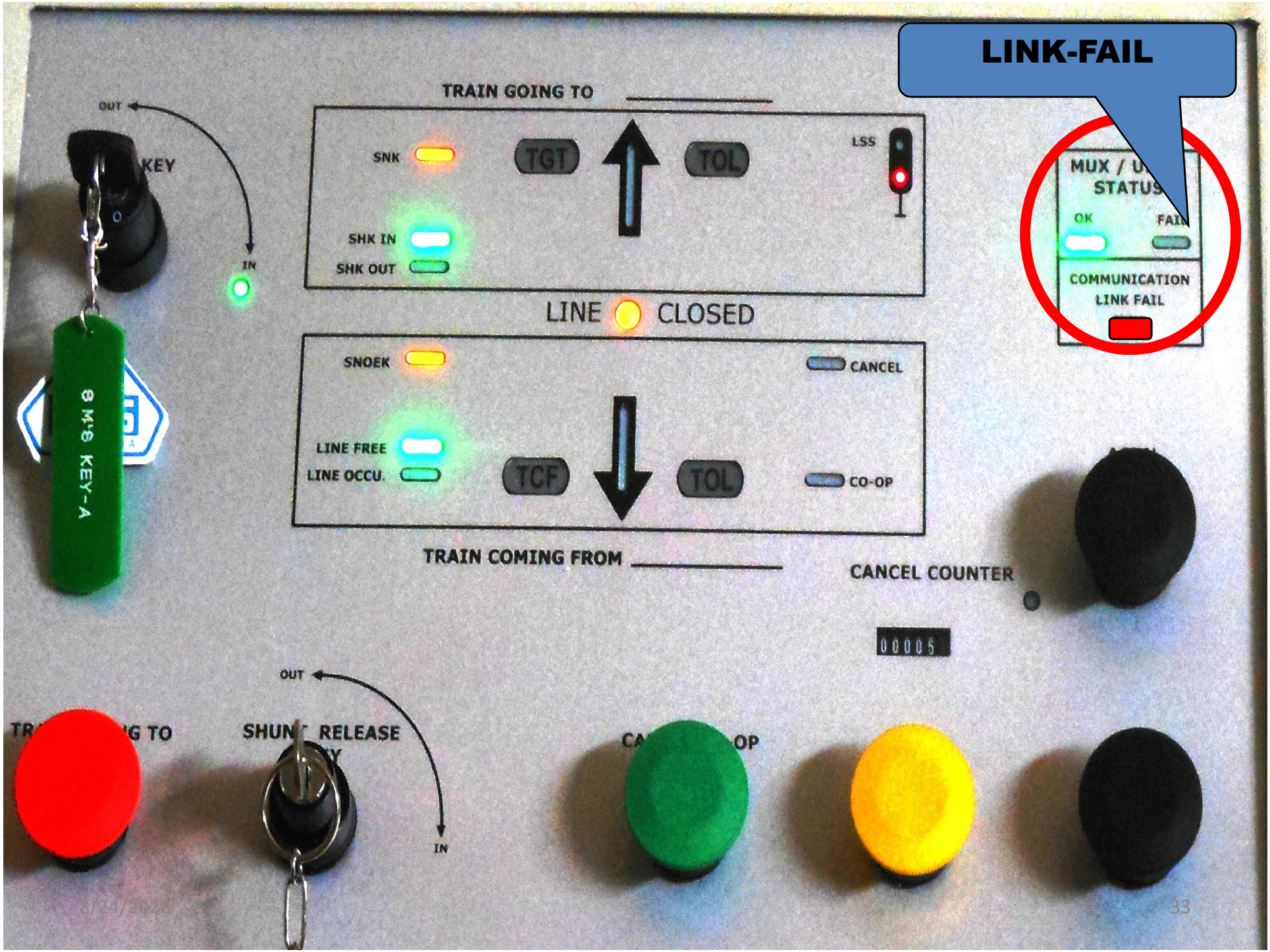

SNOEK –SIGNAL NORMAL INDICATION AVAILABLE AT OTHER STATION
TRAIN GOI
OUT
KEY
IN
SNK
SHK IN
SHK OUT
STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
8 M'S KEY-A
TRAIN COMING FROM _____
CANCEL COUNTER
00005
OUT
SHUN RELEASE
IN

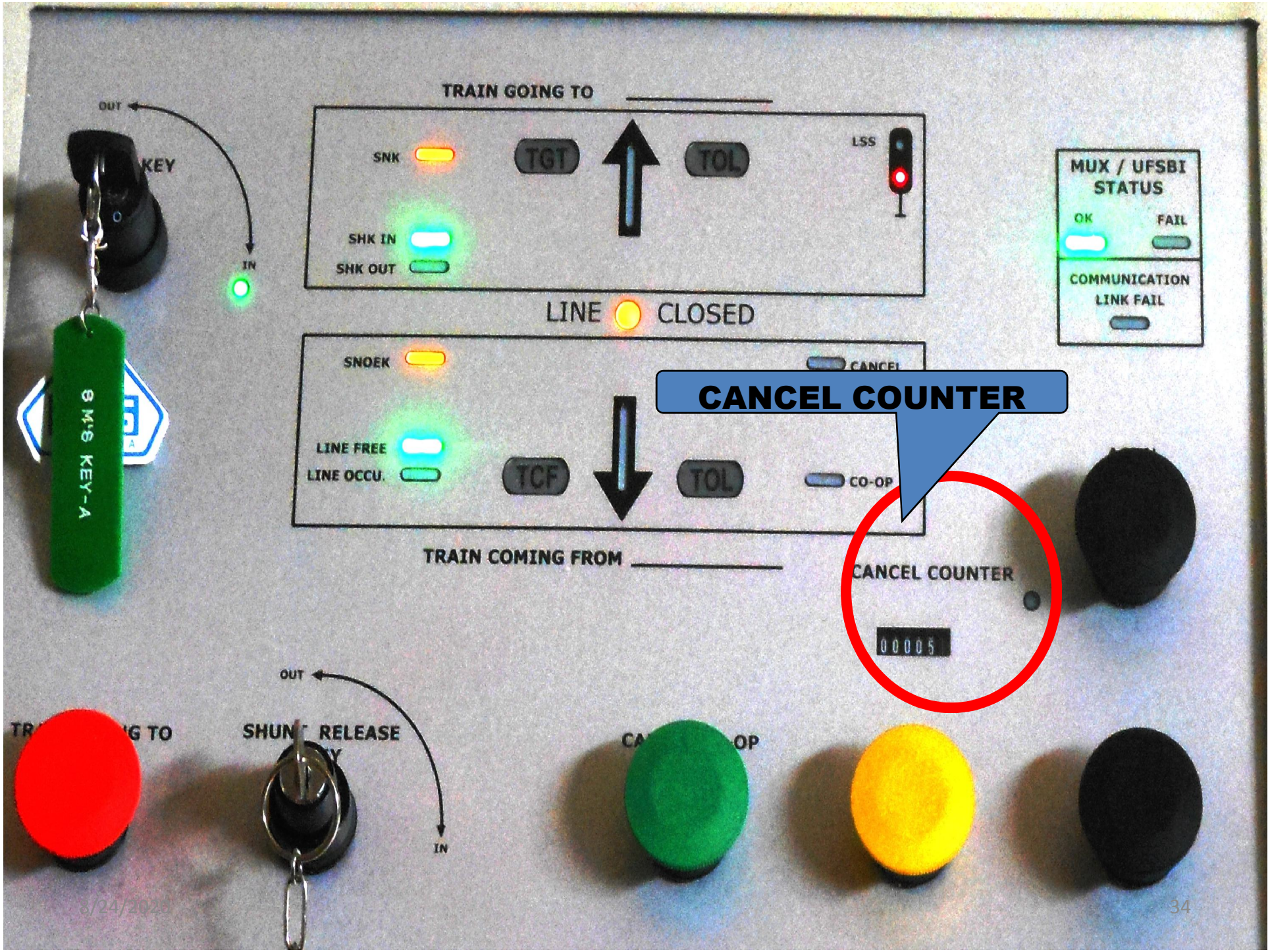

SHUNT KEY IN-GREEN
TRAIN GOING T
OUT
KEY
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
SHUNT RELEASE
IN


SHUNT KEY OUT
-RED
TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI
STATUS
OK
FAIL
COMMUNICATION
LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
SHUNT RELEASE
IN


SSBPAC-OK
TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN


SSBPAC-FAIL
TRAIN GOING TO
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
OUT
IN
MUX / U
STATUS
OK
COMMUNICATION
LINK FAIL


LINK-FAIL
TRAIN GOING TO
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
OUT
IN
MUX / U
STATUS
OK
COMMUNICATION
LINK FAIL


TRAIN GOING TO
OUT
IN
SNK
TGT
TOL
LSS
SHK IN
SHK OUT
MUX / UFSBI STATUS
OK
FAIL
COMMUNICATION LINK FAIL
LINE CLOSED
SNOEK
CANCEL
LINE FREE
LINE OCCU.
TCF
TOL
CO-OP
CANCEL COUNTER
TRAIN COMING FROM
CANCEL COUNTER
00005
OUT
IN
RELEASE

THANK YOU

H.RAGHURAM
INTR/OPTG
ZRTI/MLY