Team Update 01

General

NOTE Availability

Due to NOTE demand exceeding inventory, *FIRST* and AndyMark are capping the quantity of NOTES shipping to teams. Orders placed before NOTES went out of stock will ship, however not with more than 24 NOTES (e.g. an order of 10 will get 10, and order of 30 will get 24). For teams with more than 24 NOTES on their order, AndyMark will "backorder" the extra NOTES and work closely with customers to determine future NOTE shipments, based on availability. NOTE sales will reopen at noon (Eastern) on Wednesday, January 10, 2024, and orders will be capped at 6 per team.

We apologize for underestimating the number of NOTES teams would require, regret the inconvenience and frustration this is causing, and hope to remedy the situation soon (we are working with the manufacturer to explore having additional NOTES produced quickly).

Thank you for your patience.

Team Field Versions

The [ReadMe file for the STAGE, TE-24200](#) is updated to exclude internal editorial comments.

FIRST Championship Radios

The plan is to use the next generation of ROBOT radio at the 2024 *FIRST*® Championship, assuming the devices successfully pass decision gates over the next 3 months. For more information, please see [this recent blog](#).

Kit of Parts

The [Kickoff Kit Checklist for Season Specific Box](#) is updated to correct the number of participation pins in each box (correct amount is 30).

Game Manual

Section 5.1 FIELD

This edit is replicated in the definition of the FIELD in Section 14 Glossary.

Each FIELD for CRESCENDO is an approximately 26 ft. 11¼ in. (~~802~~ 821 cm) by 54 ft. 3¼ in. (~1654 cm) carpeted area bounded by inward facing surfaces of the ALLIANCE WALLS, SOURCES, AMPS and AMP pocket walls, and guardrails.

Section 5.6.1 SPEAKER

The opening is 3 ft. 5⅜ in. (~105 cm) wide and extends 1 ft. ~~16~~ 6 in. (~46 cm) into the FIELD.

Section 5.9 The FIELD Management System

Table 5-1 Audio cues

Event	Timer Value	Audio Cue
MATCH start	0:15 (for AUTO)	"Cavalry Charge"
AUTO ends	0:00 (for AUTO)	"Buzzer"
TELEOP begins	2:15	"3 Bells"
Final 20 seconds	0:20	"Guitar Riff"
MATCH end	0:00	"Buzzer"
MATCH stopped	n/a	"Foghorn"

Section 6.5.3 AMPLIFICATION

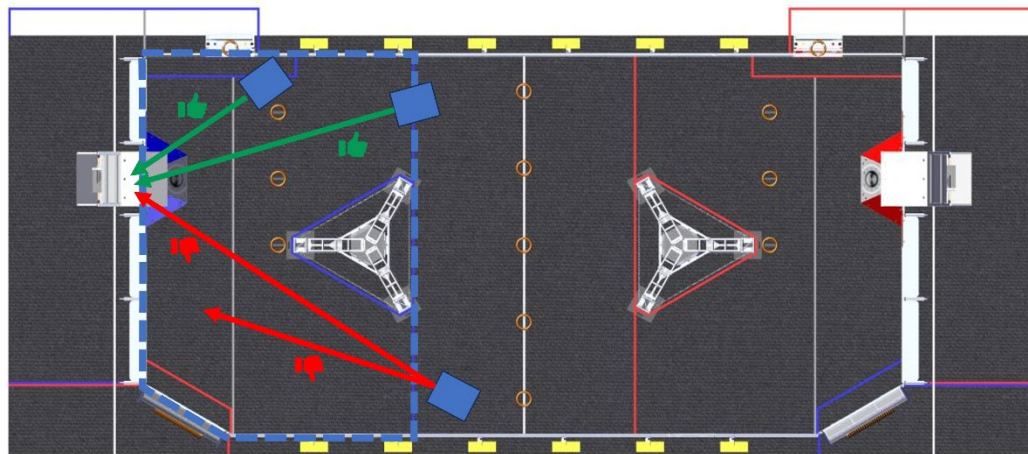*This edit is to remedy an accidental omission; the content was meant to be in the original manual release.*

Once this criterion is met, the HUMAN PLAYER may press the AMP button which AMPLIFIES their SPEAKER for 10 seconds or until 4 NOTES are scored, whichever comes first.

Section 7.4.1 AUTO

G404 **Only close shots in AUTO.** In AUTO, a ROBOT whose BUMPERS are completely outside their WING may not cause a NOTE to travel into or through their WING such that the NOTE enters the WING while not in contact with that ROBOT.

Violation: TECH FOUL.

Figure 7-2 NOTE movement limitations in AUTO

SCORING TABLE

Section 7.4.2 GAME PIECES

G408 **ROBOTS, no HIGH NOTES.** ROBOTS may not cause HIGH NOTES to leave the FIELD (including through an AMP or SPEAKER), score on a MICROPHONE, or enter a TRAP.

Violation: TECH FOUL per HIGH NOTE.

Section 7.4.3 ROBOT

G413 **Expansion limits.** A ROBOT may not expand beyond either of the following limits:
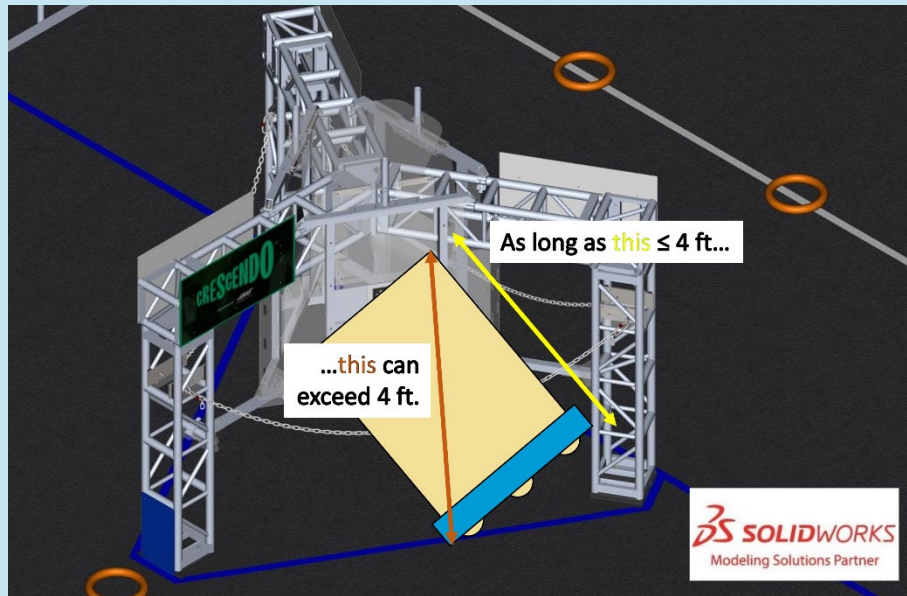
A. it's height, as measured when it's resting normally on a flat floor, may not exceed 4 ft. (~~132~~ 122 cm) or

B. it may not extend more than 1 ft. (~~40~~ 30 cm) from its FRAME PERIMETER.

Overexpansion due to damage, provided the expansion isn't leveraged for strategic benefit, is an exception to this rule.

Violation: FOUL, or TECH FOUL if the over-expansion impedes or enables a scoring action.

Height is intended to be measured as if the ROBOT is resting on a flat floor, not relative to the height of the ROBOT from the FIELD carpet. For example, a ROBOT that is attempting to get ONSTAGE may actually exceed the height limit when compared to the carpet of the FIELD.

Figure 7-3 ROBOT height elaboration

~~MOMENTARY and inconsequential extensions include a wire or cable tie swinging out of the FRAME PERIMETER, including while an extension is deployed.~~

Examples of compliant and non-compliant extensions are shown in Figure 7-4. ROBOT A violates this rule for having an extension that is too long, while ROBOTS B, C, and D do not violate this rule.

Section 7.4.5 HUMAN

G426 ***COACHES and other teams: hands off the controls.** A ROBOT shall be operated only by the DRIVERS and/or HUMAN PLAYERS of that team. A COACH activating their E-Stop or A-Stop is the exception to this rule.

Violation: TECH FOUL, plus RED CARD if greater-than-MOMENTARY.

> Exceptions may be made before a MATCH for major conflicts, e.g. religious holidays, major testing, transportations issues, etc.

Section 8.5 Motors & Actuators

R503 ***Don't modify motors (mostly).**

    H. Any number of #10-32 plug screws may be removed from the Falcon 500 and the Kraken X60.

R505   ***Don't overload controllers.**

Table 8-2 Power regulating device allotments (edited rows only)

Electrical Load	Motor Controller	Relay Module	Pneumatics Controller
AndyMark RedLine Motor **Banebots** **CIM** **REV Robotics NEO Brushless** **REV Robotics NEO 550** **REV Robotics NEO Vortex** **VEX Mini-CIM** ~~**WCP Kraken X60**~~ **WCP RS775 Pro**	Yes	No	No
CTR Electronics/VEX Falcon 500 **Nidec Dynamo BLDC Motor w/ Controller** **Playing With Fusion Venom** **WCP Kraken X60**	Yes (integrated controller only)	No	No

Section 8.7 Control, Command & Signal Systems

R701   ***Control the ROBOT with a roboRIO.** ROBOTS must be controlled via 1 programmable NI roboRIO or roboRIO 2.0 (P/N am3000 or am3000a, both versions referred to throughout this manual as "roboRIO"), with image version ~~2024_v3.1~~ 2024_v2.1 or later.

> There are no rules that prohibit co-processors, provided commands originate from the roboRIO to enable and disable all power regulating devices. This includes motor controllers legally wired to the CAN bus.

Section 8.9 OPERATOR CONSOLE

R901   ***Use the specified Driver Station Software.** The Driver Station Software provided by National Instruments ([install instructions found here](#)) is the only application permitted to specify and communicate the operating mode (i.e. AUTO/TELEOP) and operating state (Enable/Disable) to the ROBOT. The Driver Station Software must be version ~~24.1~~ 24.0 or newer.

> Teams are permitted to use a portable computing device of their choice (laptop computer, tablet, etc.) to host the Driver Station Software while participating in MATCHES.

Section 11.2 District Championship Eligibility

Table 11-5 2024 District Championship Capacities (edited rows only)

District Championship	Capacity	Divisions
Indiana State Championship	~~32~~ 38	1