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**News:****Hockey Returns With a New Point of View***Goalie cams, rail cams and HD enhance NHL coverage***by Ken Freed**

**NEW YORK:** When the Pittsburgh Penguins faced the Philadelphia Flyers on Jan. 21 at the Wachovia Center in the City of Brotherly Love, home viewers on NBC watched the action from the goalies' point-of-view as the Flyers won the game 4-2.

The National Hockey League was introducing its new "goalie cam," created to make the game more attractive to viewers. Other innovations include a robotic "rail cam" riding above the glass, more wireless microphones on players and coaches, and more HD broadcasts.

**RETHINKING THE GAME**

These changes in hockey coverage aim to regain and expand the fan base since the 10-month hiatus ended in July 2005 after NHL team owners locked out members of the NHL Players' Association in a salary dispute.

"The one clearly positive thing that came from the work stoppage was the opportunity to think about different ways to improve the game itself and improve television coverage," said Darryl Lepik, coordinating producer for NHL Productions. "Our idea is to get you closer to the action. Things like the goalie cam and wireless mics put you on the ice, inside the game, more than anything else I've ever seen."

"There have been earlier goalie cams," said Adam Acone, vice president for broadcasting and programming at the NHL, "but this new approach is unique. Instead of mounting a camera on the outside of the goalie's helmet, which has caused safety problems, this is first time the camera has actually been built into the goalie's mask."

The new NHL goalie cam was developed by Jeff Silverman, owner of Inertia

Unlimited in Jacksonville, Vt., whose latest project is the groundbreaking 1,000 fps super slo-mo camera deployed by NBC at the Winter Games. Silverman earlier designed a helmet camera for motocross racing and a baseball umpire cam for Fox Sports.

"This is a generational advancement of those systems," he said.

The new and improved goalie cam uses the Sony XC-555 mini camera. Silverman's first step was to "deconstruct" the 7-ounce cigar-shaped SD camera, which is four inches long and 7/8-inch wide. The lens was mounted behind a pencil-sized hole drilled below the chin of the goalie mask then connected by a ribbon cable to rest of the camera inside a waterproof housing at the back of the helmet.

"The comfort and safety of the goalie was our primary concern," Silverman said, recounting visits to Montreal to meet with Itek the helmet manufacturer, to coordinate production of 12 goalie cams for the NHL, painting each mask to duplicate a participating goalie's regular mask. "We've mounted the camera in a way to maximize comfort for the goalies wearing it while we ensured the camera's normal operation would not be affected by the direct impact of a hockey puck."

With an RS-232 interface on the Sony camera, he added, they can directly control the video gain, sharpness, and iris level of the fixed-image camera from a laptop with a USB connector by using **a small Global Microwave Systems 2 GHz RF transmitter mounted atop the goal.**

The prototype was first tested by Pittsburgh goalie Marc-Andre Fleury while playing for a Penguin farm team. Fleury has since worn the custom-fitting helmet in Penguin away games against the Flyers on Jan. 21 and against the New York Rangers on Jan. 28, both broadcast in HD by NBC Sports.

"Fleury has now worn the goalie cam more than anyone else in the league," Silverman said.

"Right now the goalie cam is being used on all NBC hockey broadcasts," said Acone, noting that sometimes one team will have a goalie cam and sometimes both teams will.

"Seeing the game from the goalie's perspective is a huge plus for coverage," said Sam Flood, coordinating producer for NBC Sports. "The goalie cam fits our philosophy of taking viewers inside the glass as much as possible. This is why we're so interested in the new rail cam being developed by NHL, although not every rink can accommodate it."

Acone explained that a robotic camera will ride atop the glass on a monorail that runs from one end of the rink to the other.



This prototype **goalie-cam** was tested by Marc Andre Fleury while playing for the AHL. Fleury now uses the goalie-cam for the Pittsburgh Penguins.

This system is now being developed by Fletcher Chicago, which did two indoor tests last year at an American Hockey League game in Edmonton, Alberta, and the Frozen Four college championship in Columbus, Ohio.

"We want to put cameras where people can't go," he said. "Since we can't put a camera operator in front of the fans at ice level, a rail cam under human control could follow the play dynamically, quickly stopping and changing directions as needed."

Marty Ehrlich, executive producer for hockey at OLN, is an eager supporter of the rail cam and is working on getting it integrated into the cable network's NHL coverage.

"We're completely at the mercy of the NHL and the arena operators about when and where such a system will be deployed," he said, "and if even one fan objects to a blocked view, the system may have to come down, but this will be a lot less intrusive than a camera mounted on a golf cart running along the sidelines of a football game, so I'm confident the rail cam will happen."

In lieu of a rail cam, Flood said that NBC is stationing an on-camera reporter inside the glass between the two team benches. Whenever possible, this reporter will be a former player or coach. "We want a person right in the middle of the action to tell viewers about the game."

Other than the goalie and rail cams, NHL will not allow cameras on the ice for "Shootouts," the new means of settling overtime ties during regular season games. "We decided a camera on the ice would pose too much interference," Acone said.

Yet NHL is increasing viewer access by expanding the use of wireless microphones on selected players and coaches for games carried by NBC, OLN, FSN, and TSN in Canada.

"We've approved the Quantum 5X system," Acone, said "which is so non-intrusive that players and coaches sometimes forget they're wearing a mic."

## **HI-DEF HOCKEY**

For HD, NBC uses three trucks from F&F Productions, a Clearwater, Fla. mobile production company. F&F Trucks 11 and 12 broadcast the Saturday games in HD, while F&F Truck 10 handles other broadcasts in SD.

"Which game is aired in the three regions depends on which home or away teams interest the different markets," Flood said, adding that the Stanley Cup playoffs will be broadcast entirely in HD.

OLN uses NEP Supershooter trucks 26 and 27, using nine cameras, including a robotic camera mounted inside the goal on the frame below the net, according to Erlich. OLN broadcasts hockey games on Mondays in HD while Tuesday and Wednesday games are broadcast in SD.

Regional cable systems also are getting into the act. The Madison Square Garden Network carries home games in HD, and on Jan. 19, MSG cablecast its first HD away game when the New York Rangers faced the Pittsburgh Penguins in the Steel City.

They followed that up with another HD away game Jan. 21 when the Rangers visited Boston to battle the Bruins.

"HD is having a major impact on hockey coverage," said Acone. "The 16:9 aspect ratio is about the same shape as a hockey rink, so instead of missing action as the SD camera chases the puck on a 4:3 screen, HD allows fans to see the entire play unfold. Fans sitting in their living room get the same immersive experience as if they were sitting in the lower bowl of an ice arena."

NHL is working with HDNet and other sports carriers to determine the best placement of cameras for game coverage, Acone said. "We not sure if the existing camera positions in the arenas are the right positions for HD, and we want to know for sure." So far it looks like the best spot may be about 10 rows back from the glass with the camera about 30 to 35 feet above the ice, he said, "but we're still experimenting."

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