A day 7 embryo was transferred to the horn ipsilateral to the corpus luteum (CL) in 80 recipient heifers which were ±24 hours of heat synchrony with the donor animals. All embryos were collected nonsurgically, classified as morphologically normal, and maintained in TCM 199 until transfers were done. The recipient heifers were categorized as those which had been used as donors of embryos previously and those which had not (no superovulation and no nonsurgical uterine flush). Recipient heifers were randomized into four groups: (A) flank surgical transfer, placement of the embryo high in the uterine horn (2-3 cm from the uterotubal junction); (B) flank surgical transfer, placement low in the uterine horn (approximately the region of the external bifurcation of the horns); (C) nonsurgical transfer and placement of embryo low in the uterine horn with a cassou gun; and (D) flank surgical transfer, placement low in the uterine horn with sham transcervical passage of the cassou gun to break the cervical seal. All surgical transfers were made by penetrating the uterine lumen with a 15 gauge needle through which was passed a 4 inch, 16 gauge polyethelene catheter containing the embryo in approximately .25 ml of medium. Transfers were carried out within the peritoneal cavity without visualizing the uterine horn. Nonsurgical transfers were made using a cassou gun with .5 ml French straws; embryos were deposited with approximately .30 ml of medium. As no differences in pregnancy rates were detected between recipients that had previously been donors and those which had not been donors data were combined. Pregnancy rates as determined by rectal palpation on day 40 were, respectively, (A) 12/20, 60%, (B) 9/20, 45%, (C) 15/20, 75%, and (D) 6/20, 30% (P<.05). Pregnancy rate from nonsurgical placement of the embryo (Group C) was higher than when the conceptus was transferred to the same location surgically (Group B, $x^2 = 3.75$, P<.06), indicating a technical problem with this method of surgical transfer. That Group D pregnancy rate (30%) was not different from Group B (45%) indicates passage of the cassou gun through the cervix did not impair chances for embryo survival. This was confirmed in the nonsurgical group (75% pregnant).